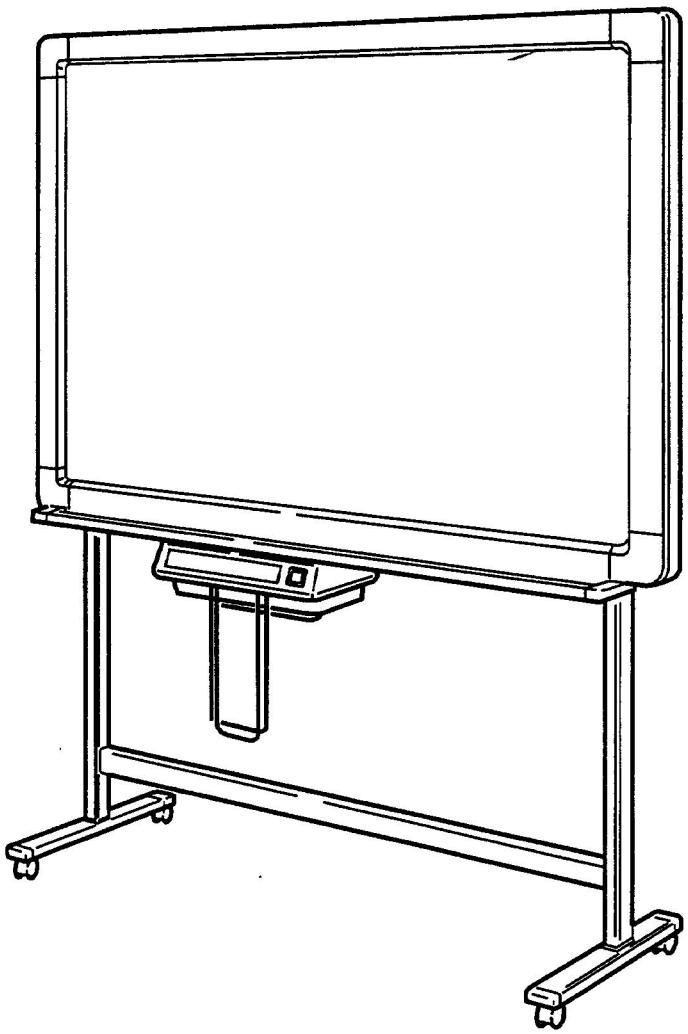
ORDER NO. KM79511076C0
H19

Service Manual

Panaboard

Electronic Print Board

KX-B430
KX-B530
KX-B630



Above is KX-B530. Stand is optional.

This is the Service Manual for the following areas.

No suffix for U.S.A.

C ...for Canada
U ...for U.K.
G ...for Germany
SP ...for Spain
A ...for Australia
GJ ...for Southeast Asia
T ...for Taiwan

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

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This Service Manual is printed on recycled paper.

SECTION 1
GENERAL PRECAUTIONS

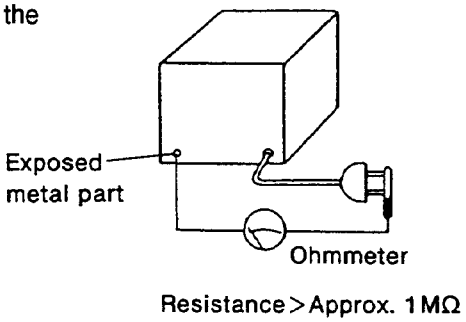
1.1 Safety Precautions

1) Before servicing, unplug the power cord to prevent an electric shock.
2) When replacing parts, use only manufacturer's recommended components for safety.
3) Check the condition of the power cord. Replace if wear or damage is evident.
4) After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5) Before returning the serviced equipment ot the customer, perform the following insulation resistance test to prevent a shock hazard.

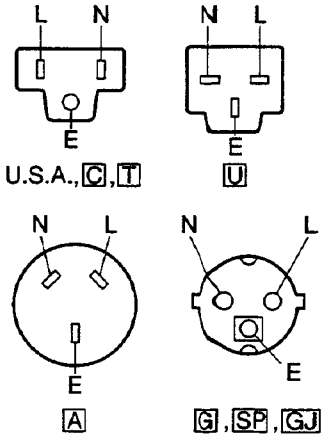
1.2 Insulation Resistance Test

1) Unplug the power cord and check for continuity between earth ground connection on the plug and the metal cabinet. There should be zero ohm resistance found.
2) With the unit unplugged, short the AC Live-Neutral of the plug with a jumper wire.
3) Turn on the power switch.
4) Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, etc.
   Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.
5) If the measurement is less than the lower limit (approx. 1MΩ), there is a possibility of a shock hazard.

Note: This condition must be corrected before the device is left with the end-user.



Resistance > Approx. 1MΩ



1.3 For Service Technicians

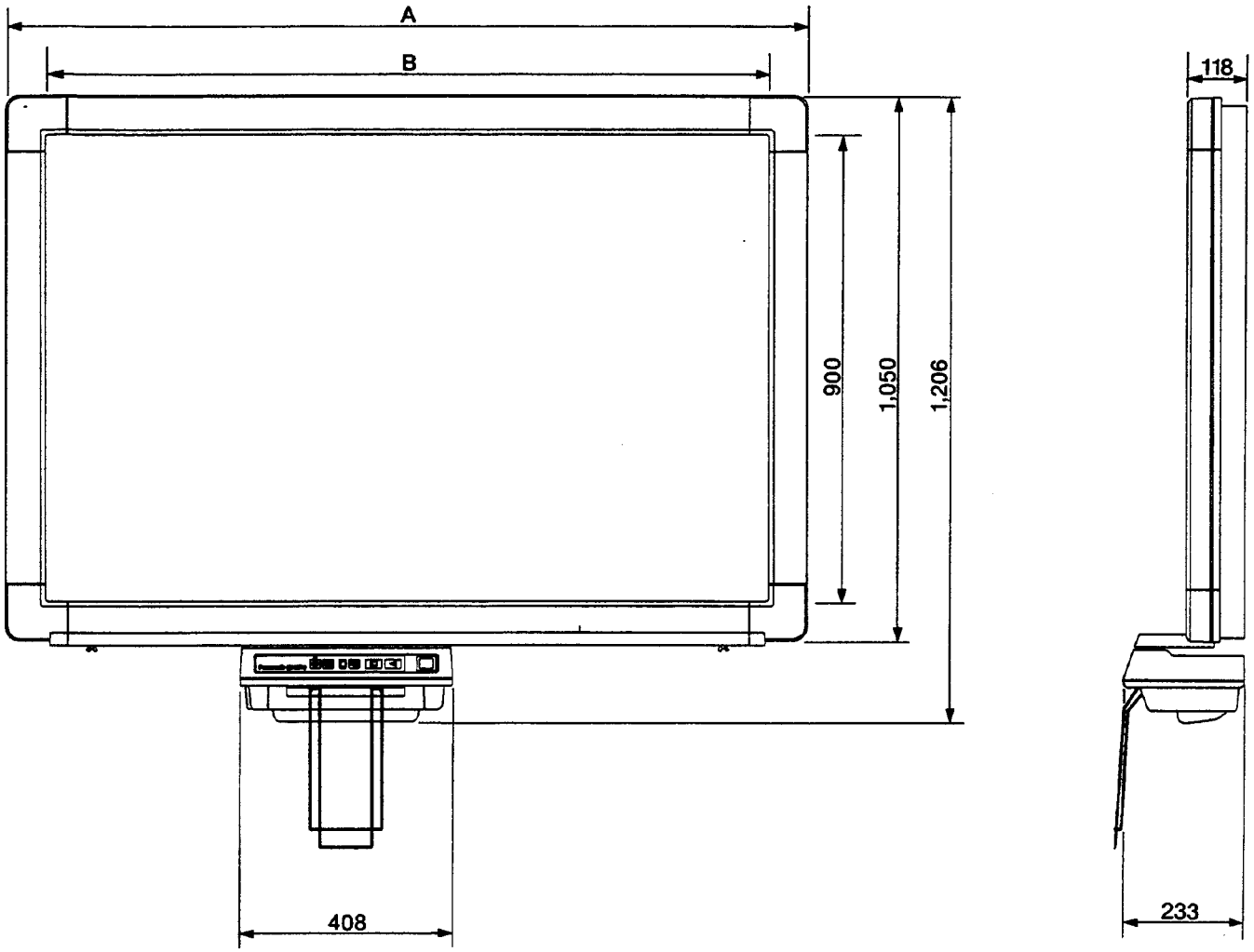
ICs and LSIs are vulnerable to static electricity.
When repairing, the following precautions will help to prevent recurring malfunctions.

1) Cover the plastic parts with aluminum foil.
2) Ground the soldering irons.
3) Use a conductive mat on the work-table.
4) Do not grasp IC or LSI pins with bare fingers.

SECTION 2
SPECIFICATIONS

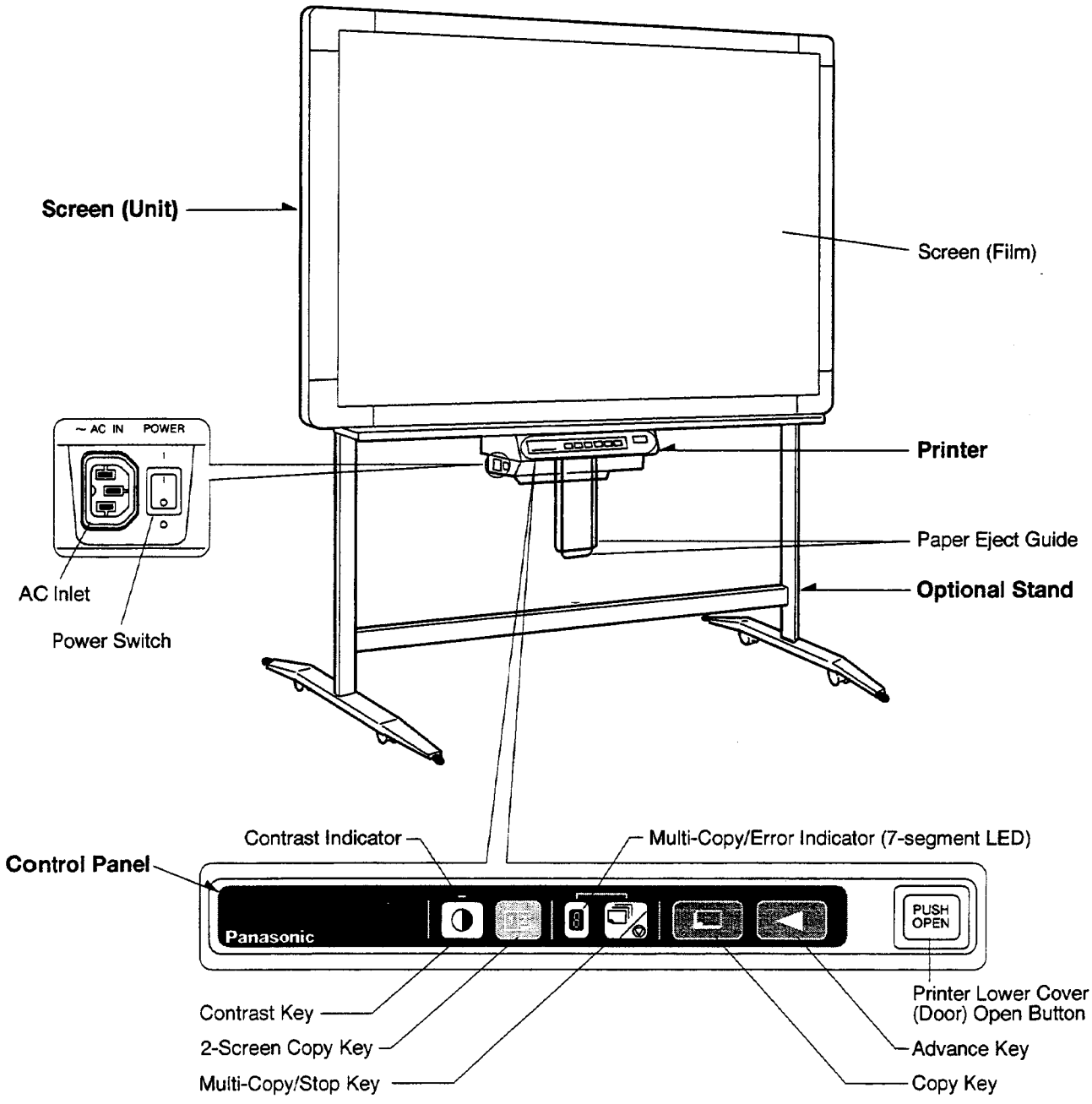
Power Source		
U.S.A. / Canada		120 V AC, 60 Hz
U.K.		220–240 V AC, 50/60 Hz
Germany		220–240 V AC, 50/60 Hz
Spain		220–240 V AC, 50/60 Hz
Australia		220–240 V AC, 50/60 Hz
Southeast Asia		220–240 V AC, 50/60 Hz
Taiwan		110 V AC, 60 Hz
Power Consumption		
U.S.A. / Canada / Taiwan		1.6 A (operating), 0.1 A (standby)
Others		1.0 A (operating), 0.1 A (standby)
Writing Panel Dimensions (W × H)		
KX-B430		800 mm × 900 mm [2' 7 1/2" × 2' 11 7/16"]
KX-B530		1,400 mm × 900 mm [4' 7 1/8" × 2' 11 7/16"]
KX-B630		1,762 mm × 900 mm [5' 9 3/8" × 2' 11 7/16"]
Copy Area Dimensions (W × H)		
KX-B430		730 mm × 850 mm [2' 4 3/4" × 2' 9 15/32"]
KX-B530		1,330 mm × 850 mm [4' 4 3/8" × 2' 9 15/32"]
KX-B630		1,680 mm × 850 mm [5' 6 5/32" × 2' 9 15/32"]
Number of Screens		2 (endless type)
Scanning Method		Moving screen method using a CCD image sensor
Printing Method		Thermosensitive method
Printing Paper		Thermosensitive roll paper
Paper Size (W × H)		
U.S.A. / Canada		8 1/2" × 11" [216 mm × 279.4 mm]
Others		210 mm × 297 mm [8 1/4" × 11 11/16"]
Copy Size (W × H)		
KX-B430	A4	180 mm × 202 mm [7 3/32" × 7 15/16"]
	Letter	7 5/16" × 7 15/16" [186 mm × 202 mm]
KX-B530/B630	A4	180 mm × 287 mm [7 3/32" × 11 5/16"]
	Letter	7 5/16" × 10 5/8" [186 mm × 270 mm]
Copy Density		8 dots/mm [203 dots/in.]
Copy Speed		
KX-B430		20 seconds/sheet or less
KX-B530/B630		15 seconds/sheet or less
Number of Copies		1–9
Writing Instruments		Dry felt water-type markers (black, red, blue)
Environmental Conditions		
Temperature		10–35°C [50–95°F]
Humidity		30–80% R.H.
External Dimensions		See the right page.
Mass (Weight)		
KX-B430		27.5 kg [60.6 lb.]
KX-B530		33.5 kg [73.8 lb.]
KX-B630		37 kg [81.5 lb.]
Options		
Stand (for U.S.A.)		KX-B061M for KX-B530/B630, KX-B062M for KX-B430
(for other countries)		KX-B061 for KX-B530/B630 Series, KX-B062 for KX-B430 Series
Wall-Mounting Kit		KX-B063
Printer Interface		KX-B09
Eraser		KX-B04

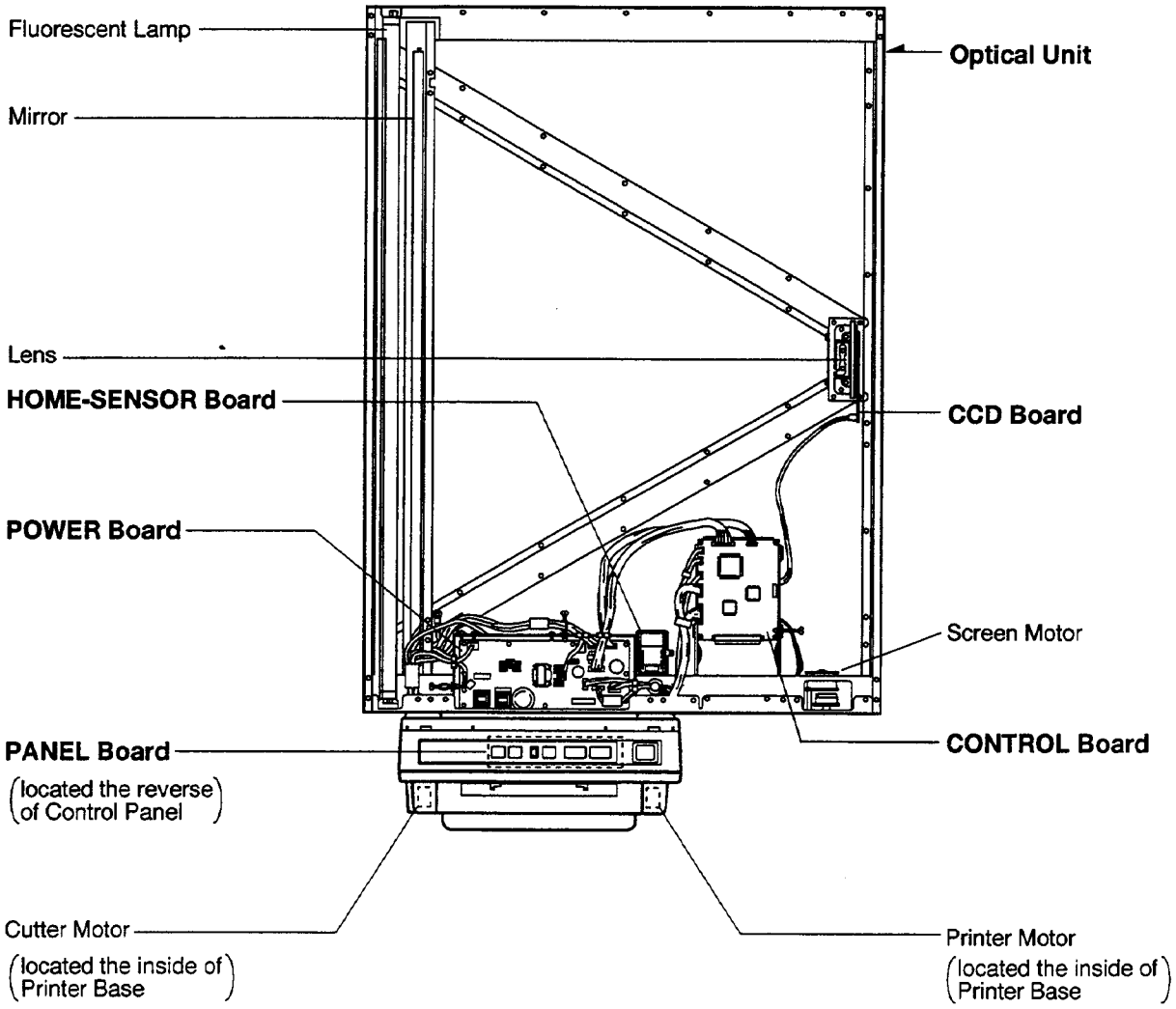
Exterior Dimensions



	KX-B430	KX-B530	KX-B630
Lenght **A**	950 mm [3' 1 13/32"]	1,550 mm [5' 1 1/32"]	1,912 mm [6' 3 9/32"]
Lenght **B**	800 mm [2' 7 1/2"]	1,400 mm [4' 7 1/8"]	1,762 mm [5' 9 3/8"]

SECTION 3
NAME AND FUNCTION OF EACH PART




Fluorescent Lamp
Mirror
Lens
HOME-SENSOR Board
POWER Board
PANEL Board
(located the reverse of Control Panel)
Cutter Motor
(located the inside of Printer Base)
Optical Unit
CCD Board
Screen Motor
CONTROL Board
Printer Motor
(located the inside of Printer Base)

SECTION 4
INSTALLATION

4.1 Installation Requirements

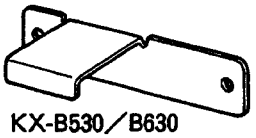
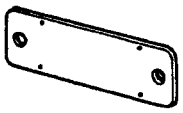
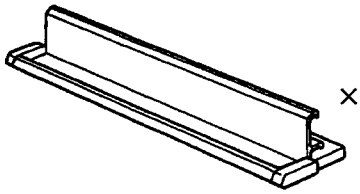
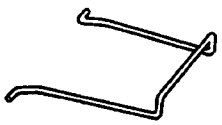
The Panaboard is a precision designed machine, which somewhat depends on the surrounding conditions for optimum operation. Attention to the following, will result in more reliability and quality performance.

1. The Panaboard should not be installed in areas with the following conditions:
   (1) High temperature and high humidity or low temperature and low humidity
   (2) Direct exposure to sunlight
   (3) Direct in air conditioning flow, or close to heater ducts
   (4) Uneven floor

2. The Panaboard weight: 37 kg/81.5 lb. (KX-B630), 33.3 kg/73.8 lb. (KX-B530) or 27.5 kg/60.6 lb. (KX-B430), it should be installed on sturdy flat surface.

4.2 Assembling the Print Board

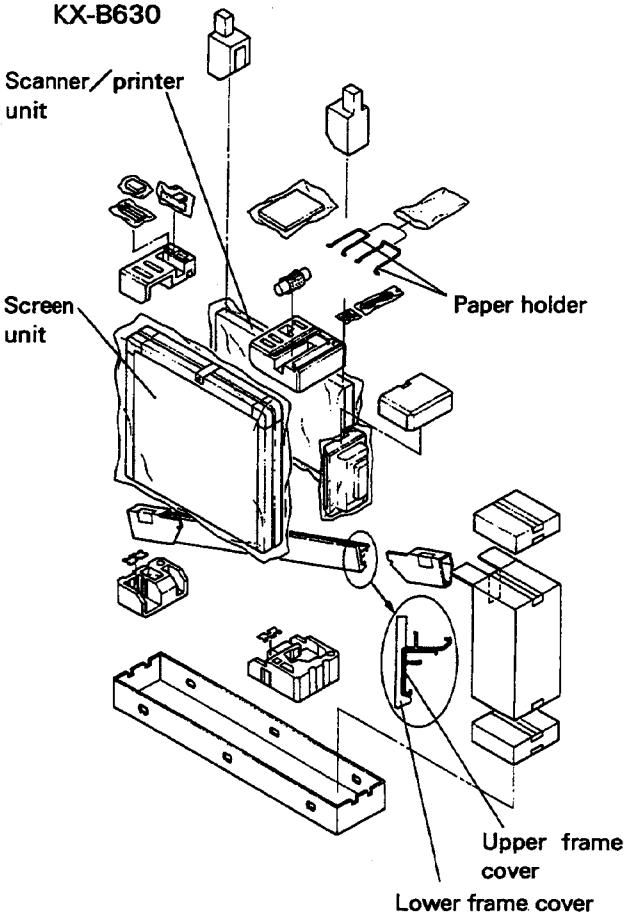
The package box includes the parts noted in table shown at the right column; please confirm that all parts are present before beginning installation.

Illustration / Q'ty		Order of Use
 KX-B530/B630	× 1	8
 KX-B530/B630	× 1	8
KX-B530/B630	× 4	10
	× 1	13
	× 1	14
	× 2	14
	× 1	15
	× 1	15

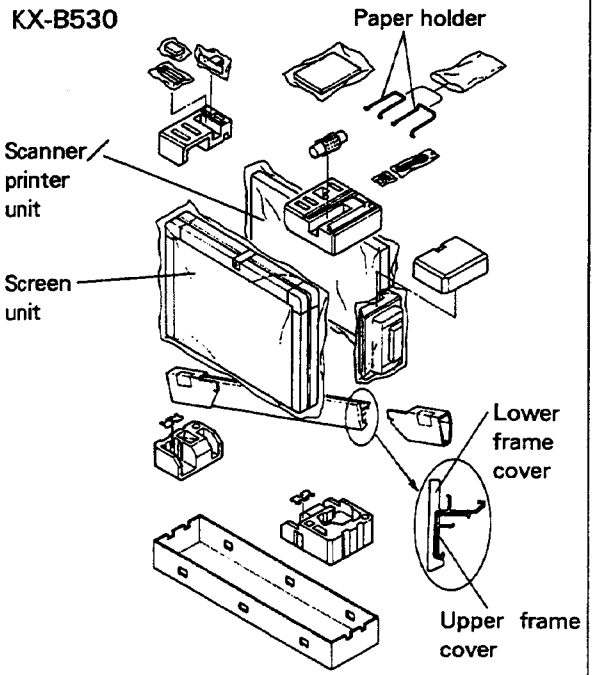
1 Assemble the optional stand or attach the optional wall-mounting kit.
- Refer to the manual of the optional stand KX-B061/M (for KX-B530/B630), KX-B062/M (for KX-B430) for further details.
- Refer to the manual of the optional wall-mounting kit KX-B063 for further details.

2 Remove all cushioning material and other packaging materials.

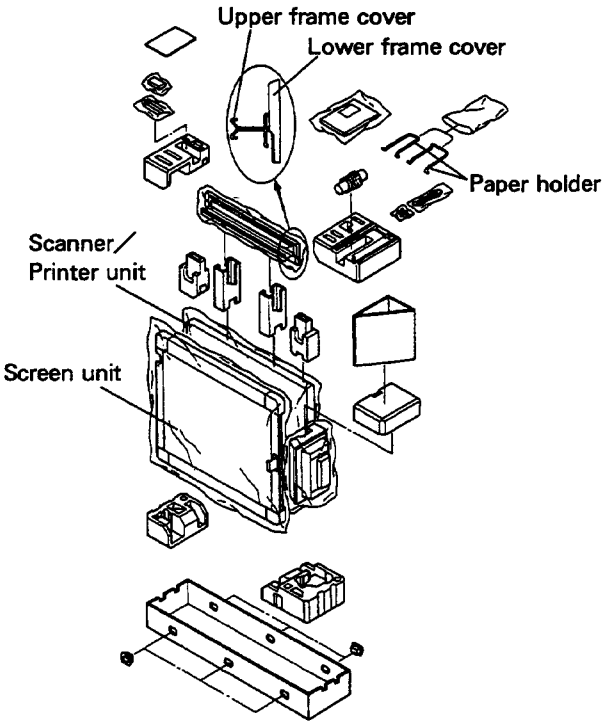
KX-B630



KX-B530

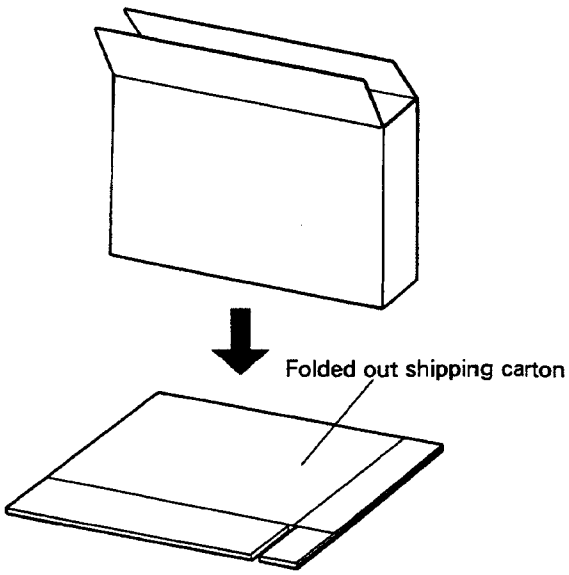


KX-B430



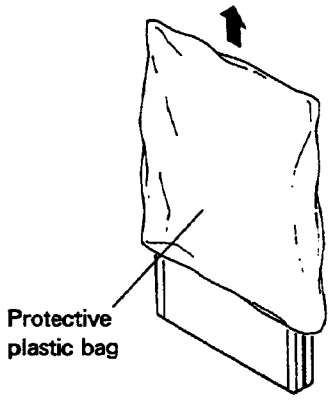
- The shipping carton, cushioning material and other packing materials will be required at the time of any later repacking, so preserve them carefully.

3 After removing the electronic print board from its shipping carton, remove or cut the tape on the unopened side of the shipping carton and fold out.

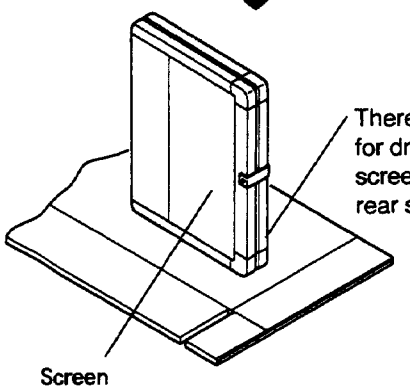


- In step 4, it is also possible to use a piece of cardboard or similar material instead of the shipping carton. In this case, it is not necessary to fold out the shipping carton as described above.

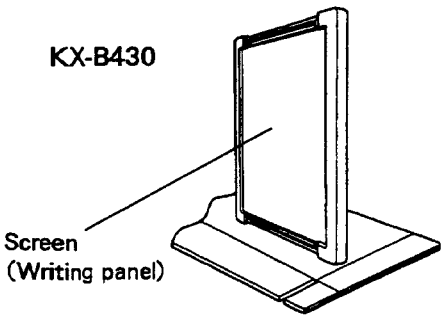
4 After pulling the screen unit and scanner/printer unit from those protective plastic bags, set those units on the folded out shipping carton.



KX-B530/B630



KX-B430



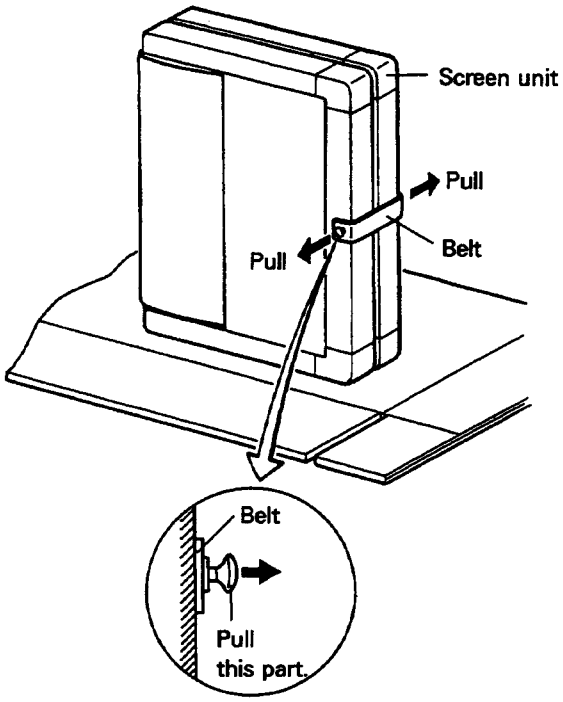
CAUTION:
Don't touch the screen (writing panel) to prevent damage while assembling.

5 **To use the optional stand,** mount the scanner/printer unit on the stand.

- Refer to the manual of the optional stand KX-B061/M (for KX-B530/B630), KX-B062/M (for KX-B430) for further details.

KX-B530/B630:Proceed to No. 6.
KX-B430:Proceed to No.10.

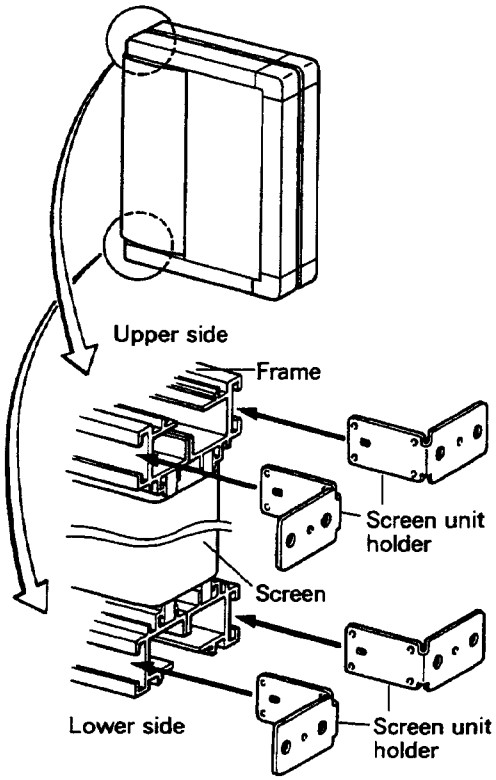
6 Remove the belt. (KX-B530/B630)



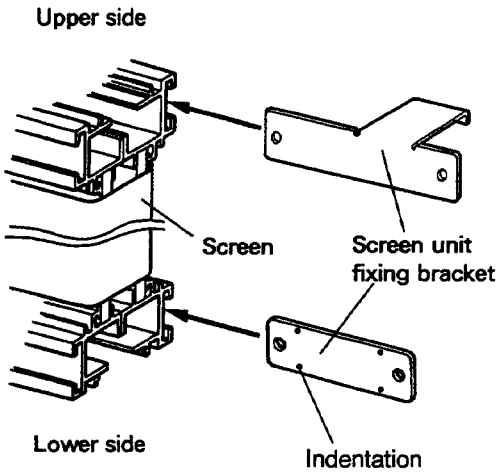
7 **To use the optional stand,** insert the four screen unit holders. (KX-B530/B630)

- Screen unit holders are included in the optional stand KX-061/M carton box.

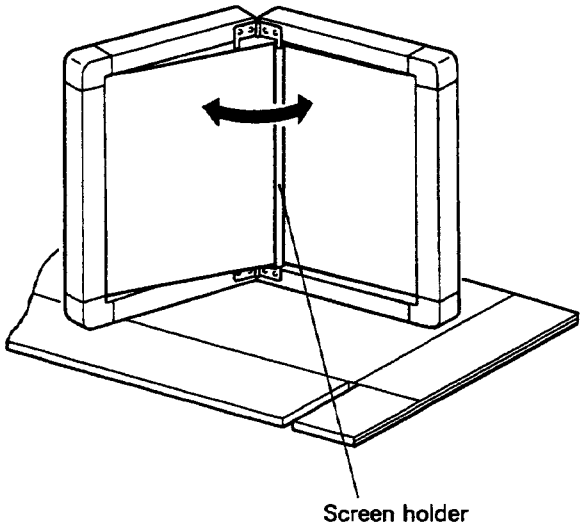
To mount on a wall, it is not necessary to perform this step.



8 Insert the two screen unit fixing brackets. (KX-B530/B630)



9 Open the screen unit. (KX-B530/B630)

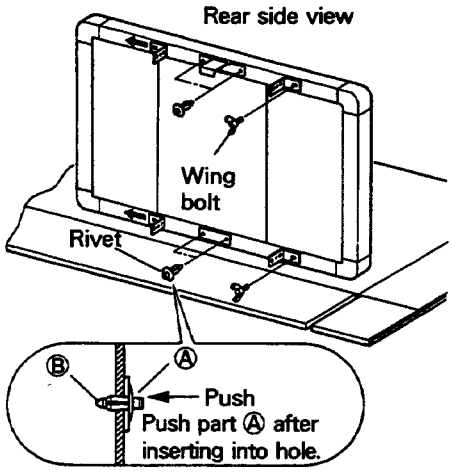


10 Slide the two screen unit fixing brackets to the center of screen unit and fix with the four rivets (two rivets for each bracket).
Next, slide the two of the four screen unit holders to the correct position and fix with two wing bolts (this is not necessary for wall-mounting).
Slide the other two screen unit holders in the direction of the arrows.

- Wing bolts are included in the optional stand (KX-B061/M, B062/M) carton box.

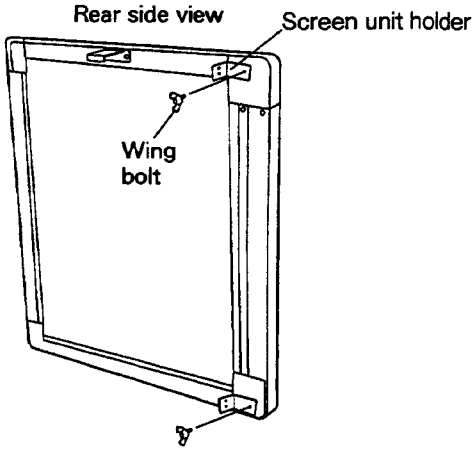
CAUTION:
It is necessary to slide two screen unit holders in the direction of the arrows for performing step 11.

KX-B530/B630



- When disassembling, push part Ⓐ again and push back rivet while holding part Ⓑ.
  Note: The upper and lower frame covers must be removed first.

KX-B430



- Screen unit holders and wing bolts are included in the optional stand (KX-B062/M) carton box.

11 To use the optional stand:

1. Hang the screen unit on the scanner/printer unit mounted on the optional stand as shown in Fig. 1
2. Insert the hole of the screen to the screen mounting guide, as shown in Fig. 1.
3. Fix with the two wing bolts ① and, the four wing bolts ② as shown in Fig. 2 and 3.
4. Pull out the paper (gear protector), see Fig. 1.

- Wing bolts are included in the optional stand (KX-B061/M, B062/M) carton box.

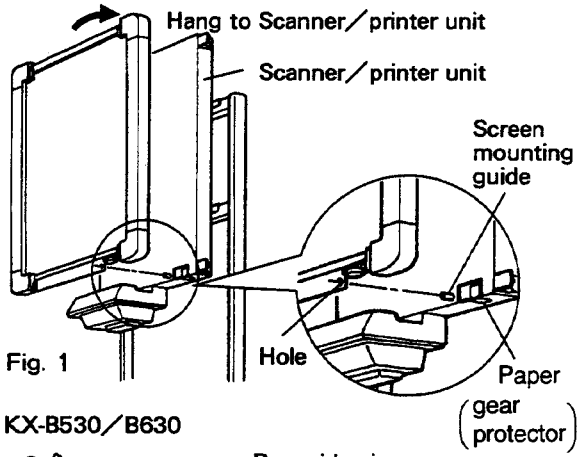


Fig. 1

KX-B530/B630

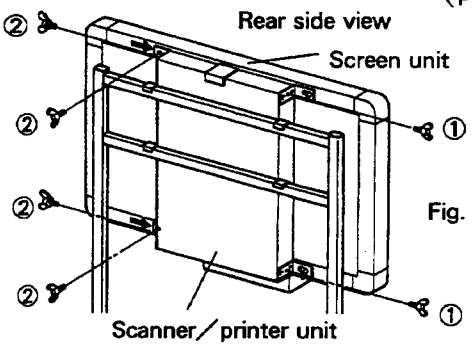


Fig. 2

KX-B430

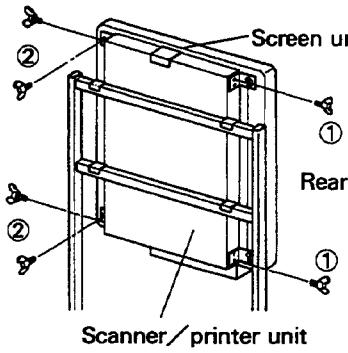
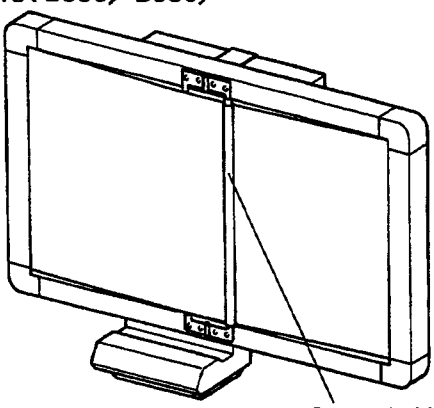


Fig. 3

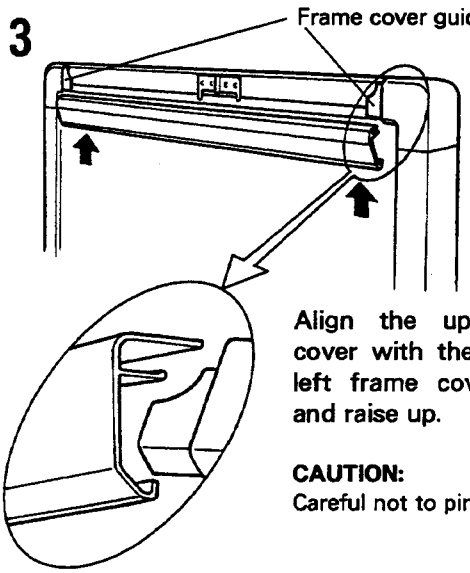
To mount on a wall, install the assembled scanner/printer unit to the wall-mounting fixtures and install the screen unit to the scanner/printer unit.

- Refer to the manual of the optional wall-mounting kit KX-B063 for further details.

12 Bend out and remove the screen holder. (KX-B530/B630)



13

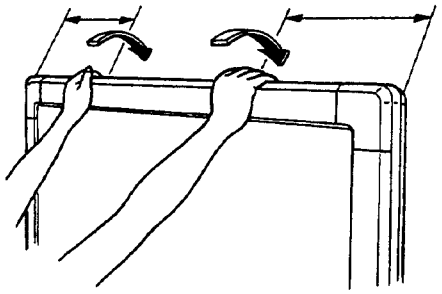


Align the upper frame cover with the right and left frame cover guides, and raise up.

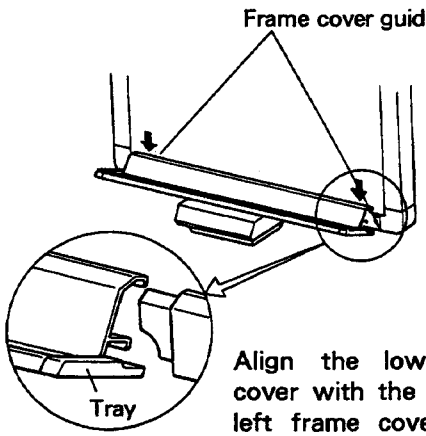
CAUTION:
Careful not to pinch fingers.

Place your hands at points about 26 cm [10″ (for KX-B430)], 30 cm [12″ (for KX-B530)] or 55cm [21″ (for KX-B630)] from the right and left ends, and raise the upper frame cover, pressing in the direction of the arrows until the cover clicks into place.

KX-B630:	KX-B630:
55 cm (21″)	55 cm (21″)
KX-B530:	KX-B530:
30 cm (12″)	30 cm (12″)
KX-B430:	KX-B430:
26 cm (10″)	26 cm (10″)

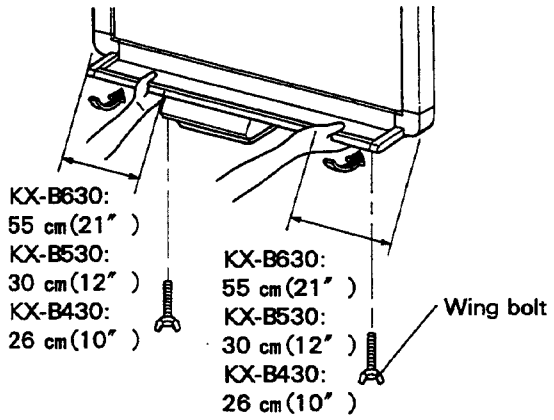


14



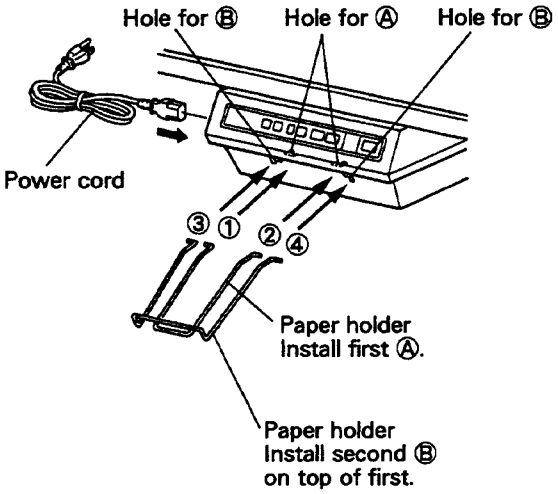
Align the lower frame cover with the right and left frame cover guides, and press down.

Grasp the tray of lower frame cover at points about 26 cm [10″ (for KX-B430)], 30 cm [12″ (for KX-B530)] or 55cm [21″ (for KX-B630)] from the right and left ends, and push down on the lower frame cover, pressing in the direction of the arrows until the cover clicks into place, then fasten with the two wing bolts.



15

Attach the paper holders to the printer section in numerical order of the arrows ①, ②, ③ and ④.
Then, plug the provided power cord firmly into the power cord jack at the right side of the printer section.



- After assembly, moisten a clean soft cloth with water, wring well, and wipe the screen gently.

SECTION 5
DISASSEMBLY INSTRUCTIONS

5.1 Disassembly Procedures

5.1.1 Removing the Screen

– If the print board is mounted on the optional stand –

1) Remove 6 wing bolts shown in Fig. 5-1.
   • Slide the two screen unit holders to the left.

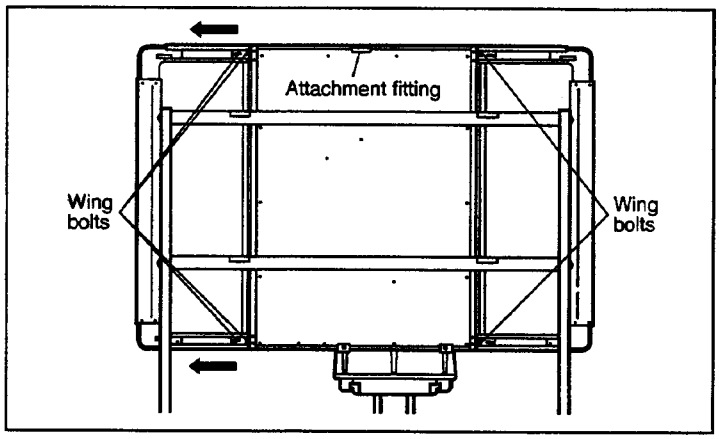


Fig. 5-1

2) Pull the bottom of the screen toward you, and lift the screen as shown in Fig. 5-2.
   Note: By pulling the bottom of the screen away from the scanner/printer, the guide pin is disengaged.

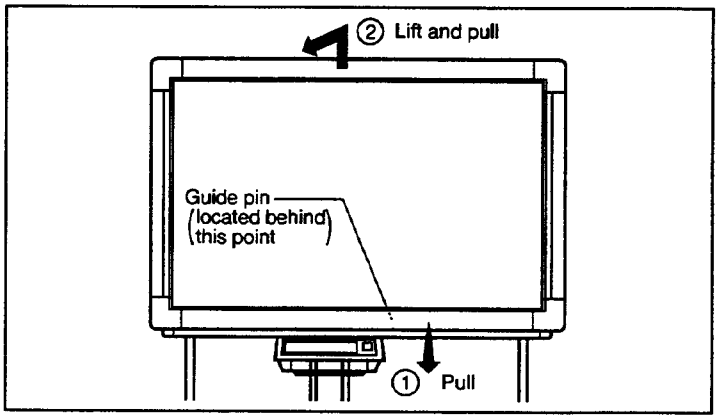


Fig. 5-2

– If the print board is mounted on the wall –

1) Remove 2 thumb screws, as shown in Fig. 5-3, and remove the lower and upper frame covers.

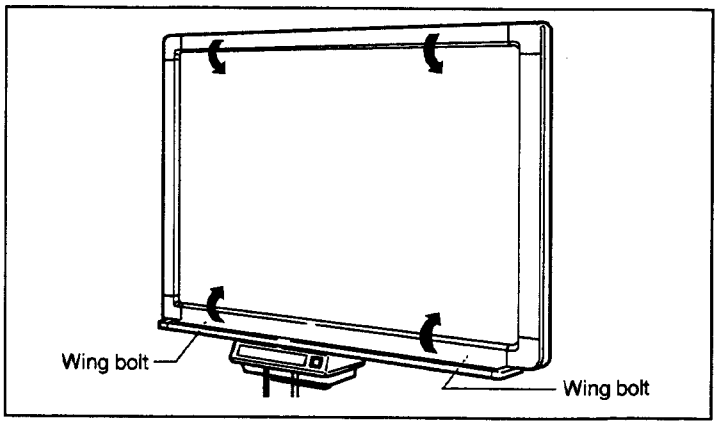


Fig. 5-3

2) Remove 4 screws, as shown in Fig. 5-4, and remove the screen (lift and pull to remove).

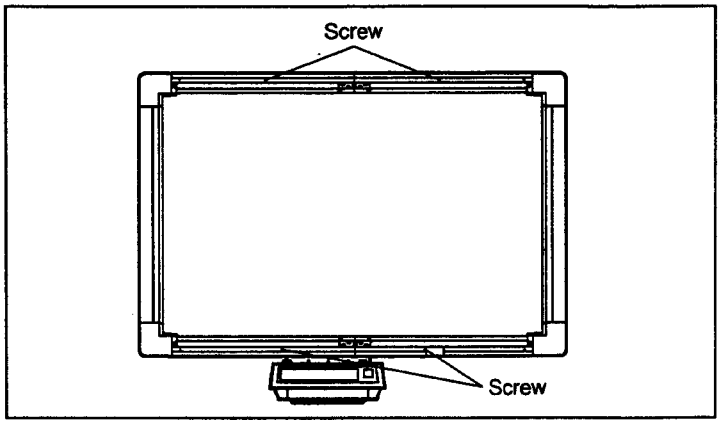


Fig. 5-4

5.1.2 Removing the Printer

1) Remove the paper eject guide.
2) Remove the screen. (See 5.1.1.)
   Note: If the print board is mounted on the wall, remove the optical unit with the printer.
3) Remove 1 screw (A) shown in Fig. 5-5.
4) Remove 21 screws (B) and loosen 2 screws (C), as shown in Fig. 5-5, and remove the optical unit cover with the CCD cover.

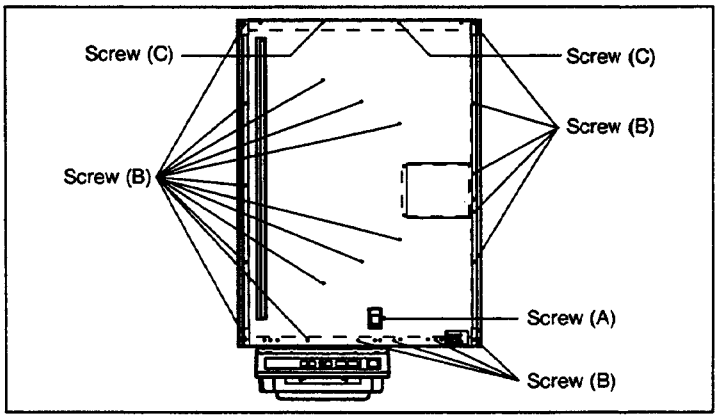


Fig. 5-5

5) Remove 5 screws (D), as shown in Fig 5-6, and remove the POWER Board cover.
6) Remove 11 screws (E), as shown in Fig 5-6, and remove the CONTROL Board cover.

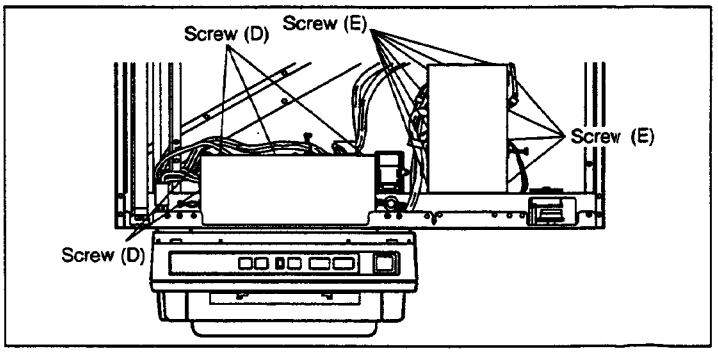


Fig. 5-6

7) Remove 2 ground lug screws shown in Fig. 5-7.
8) Disconnect 4 connectors CN400, CN404, CN405 and CN407 on the POWER Board.
9) Disconnect 4 connectors CN4–CN7 on the CONTROL Board.
   Notes:
   - If the cables have cores, remove the cores.
   - If the cable are clamped, release them.
   - When re-assembling, refer to 5.5 Re-assembling Note.
10) Remove 4 screws shown in Fig. 5-7.

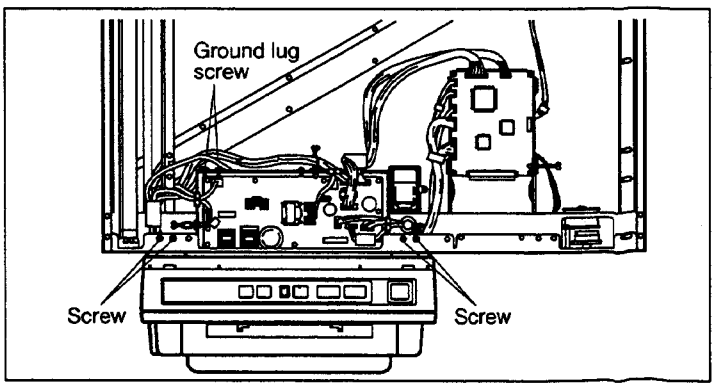


Fig. 5-7

11) Hold the printer, and remove 2 screws shown in Fig. 5-8.
From the front, swing the bottom toward you.
While the unit is fitted, slide the printer to the right and lower carefully.
Note: Lower the printer slowly, while feeding wire harness through the frame.
Caution: Be careful not to drop the printer.

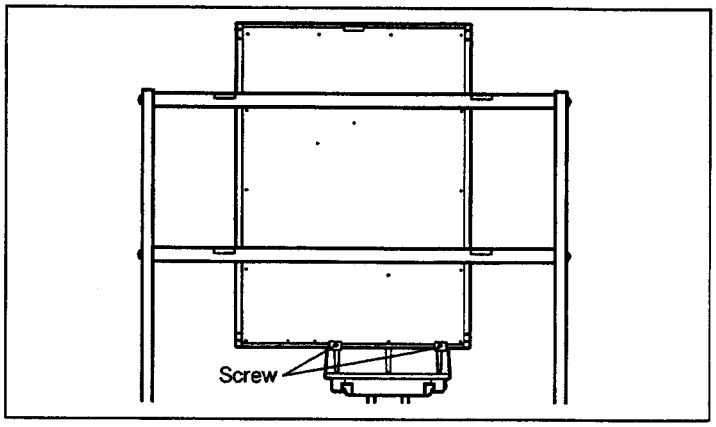


Fig. 5-8

5.1.3 Disassembling the Printer

1) Remove 2 screws (A) shown in Fig. 5-9, then release the ground lugs.
2) Remove 6 screws (B), as shown in Fig. 5-9, and remove the printer upper cover (assembly).
3) Pull 5–8 cm (2–3 inches) of CN5 harness toward the left side of the printer (Power inlet/switch side) for extra play during next step.

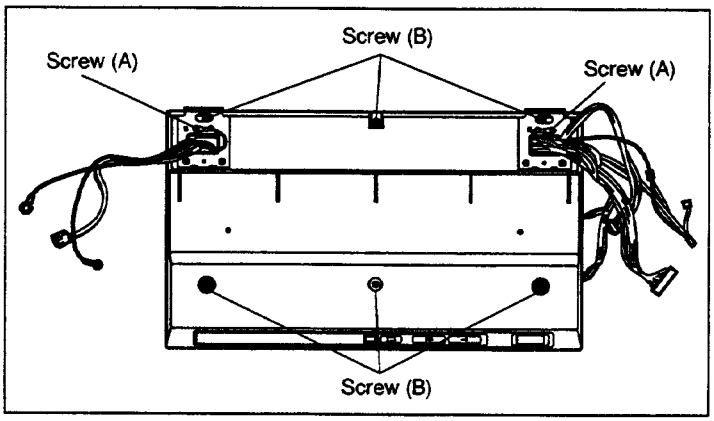


Fig. 5-9

4) Remove 4 screws, as shown in Fig. 5-10, and remove the printer lower cover (assembly) from the printer base.
Note: Be careful during this step so that the harness to the cutter home sensor is not damaged.

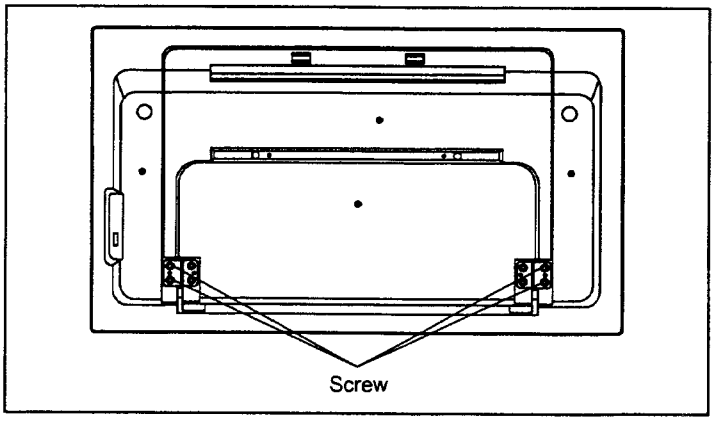


Fig. 5-10

5.2 Replacing Limited Life Parts

5.2.1 Replacing the Fluorescent Lamp

1) Remove the screen. (See 5.1.1.)
2) Remove the optical unit cover.
   (See 5.1.2, steps 2 and 3.)
3) Twist the fluorescent lamp 90 degrees to remove it as shown in Fig. 5-11.
   Note: Because access to this lamp is limited, please twist the lamp as shown in Fig. 5-11 from the bottom.

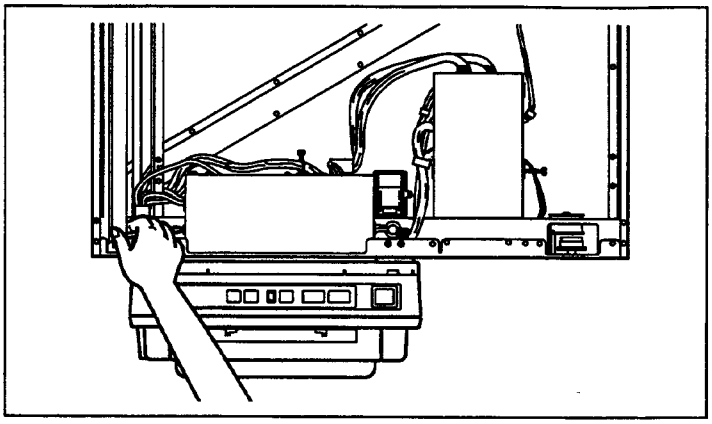


Fig. 5-11

5.2.2 Replacing the Thermal Head

1) Remove the screen. (See 5.1.1.)
2) Remove the printer. (See 5.1.2.)
3) Remove the printer upper and lower covers. (See 5.1.3.)
4) Remove the tape shown in Fig. 5-12.

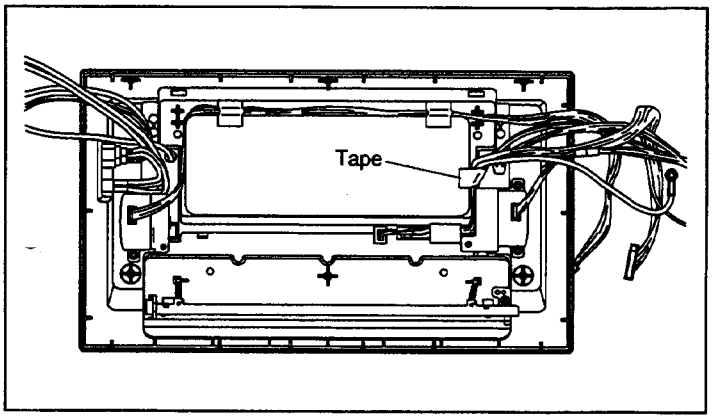


Fig. 5-12

5) Remove 2 screws shown in Fig. 5-13.
6) Remove the thermal head and disconnect the connector.

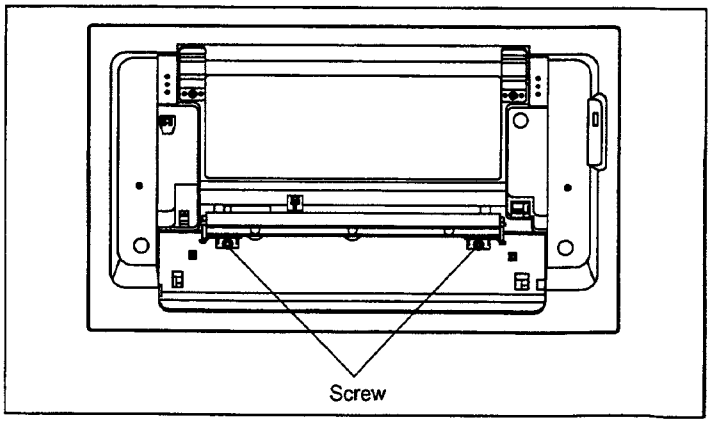


Fig. 5-13

5.2.3 Replacing the Screen (Film)

– For the KX-B530/B630 –

1) Remove the screen. (See 5.1.1.)
   Note: If the print board is mounted on the optional stand, remove the upper and lower frame covers as shown in Fig. 5-3.
2) Remove 8 screws (A), as shown in Fig. 5-14, and remove the rear covers with the attachments.
3) Remove 8 screws (B) shown in Fig. 5-14.

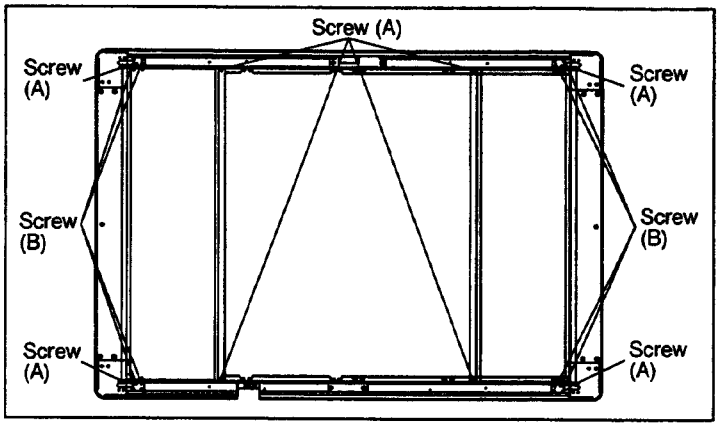


Fig. 5-14

4) Remove 4 screws, as shown in Fig. 5-15, and remove the frame covers with the corner frame cover attachments.

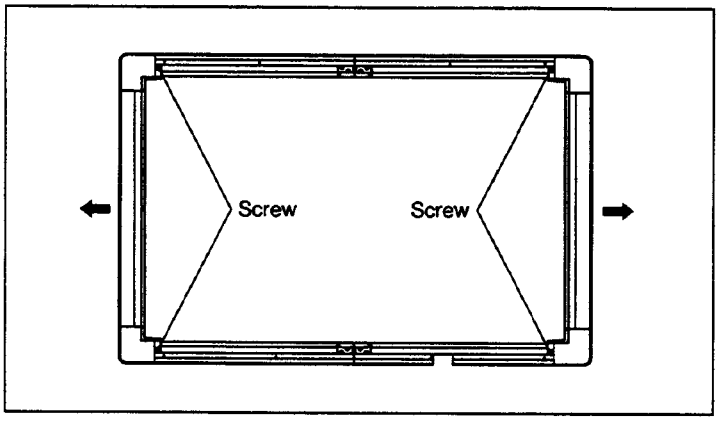


Fig. 5-15

5) Unhook 3 tension springs shown in Fig. 5-16.
6) Remove 2 screws, as (A) shown in Fig. 5-16, and remove the drive roller attachment with the screen holder.
7) Remove the roller (assembly).
   Note: Belt in the bottom side will come off while removing the roller.
8) Remove 2 screws (B), as shown in Fig. 5-16, and remove the screen holder.

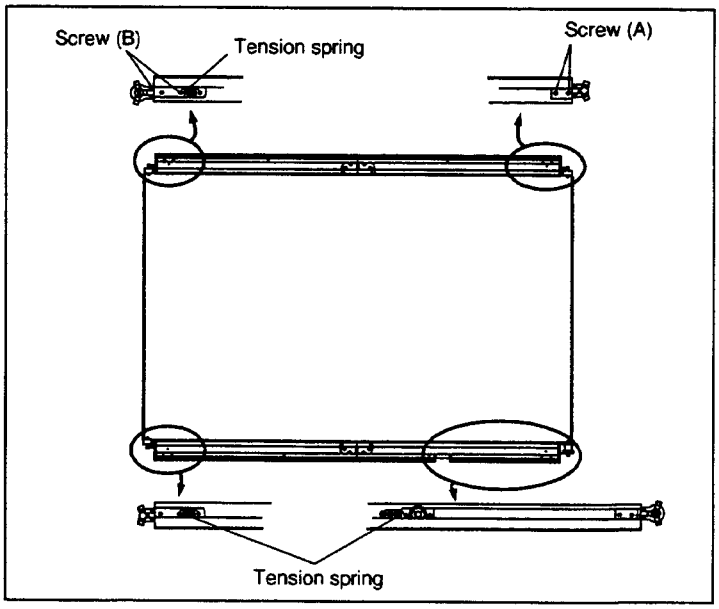


Fig. 5-16

9) Remove 4 nylon rivets shown in Fig. 5-17.
10) Slide upper and lower panel slide plates, then fold the screen.

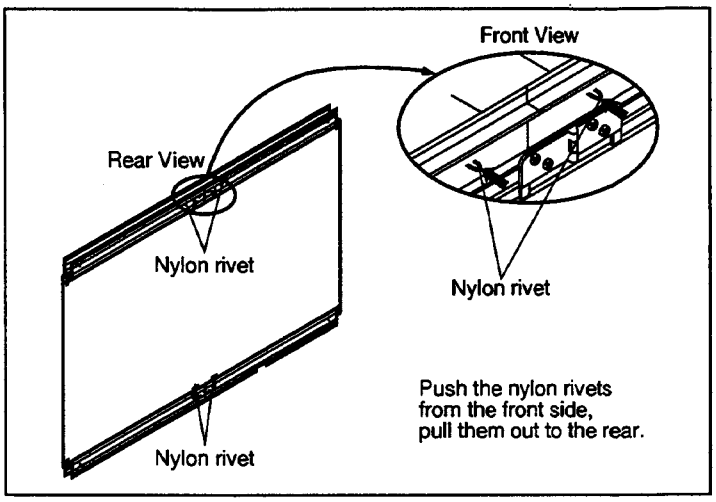


Fig. 5-17

11) Remove the screen (film) as shown in Fig. 5-18.
Note: Re-assemble in reverse order.
During re-assembly, make sure that the screen home markers are located alone the lower edge of the screen. Also, carefully position the new screen (film) between the drive rollers and screen holders on each corner.

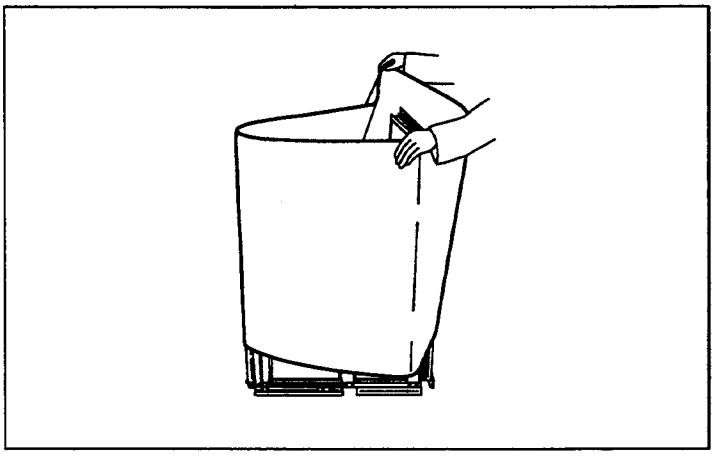


Fig. 5-18

– For the KX-B430 –

1) Remove the screen. (See 5.1.1.)
Note: If the print board is mounted on the optional stand, remove the upper and lower frame covers as shown in Fig. 5-3.
2) Remove 8 screws [same as (B) shown in Fig. 5-14].
3) Remove 4 screws [same as shown in Fig. 5-15], and remove the frame covers with the corner frame cover attachments.
4) Unhook 3 tension springs [same as shown in Fig. 5-16].
5) Remove 2 screws [same as (A) shown in Fig. 5-16], and remove the drive roller attachment with the screen holder.
6) Remove the roller (assembly).
Note: Belt in the bottom side will come off while removing the roller.
7) Remove 2 screws [same as (B) shown in Fig. 5-16], and remove the screen holder.
8) Remove the screen (film) as shown in Fig. 5-19.

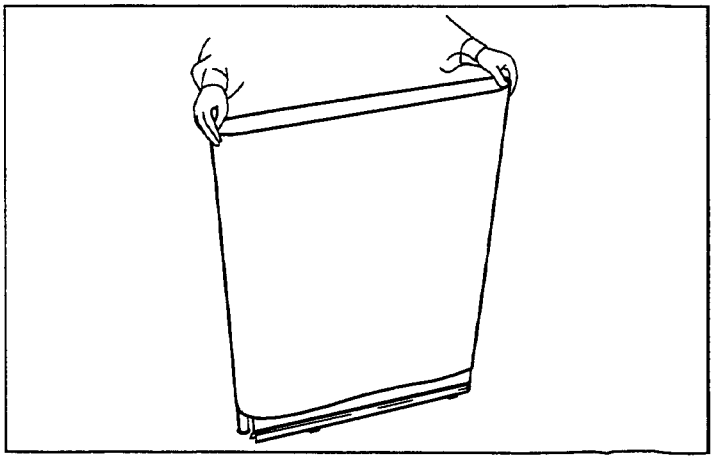


Fig. 5-19

5.3 Replacing Unit Components

5.3.1 Replacing the Screen Motor

1) Remove the screen. (See 5.1.1.)
2) Remove the optical unit cover.
   (See 5.1.2, steps 2 and 3.)
3) Remove 2 screws shown in Fig. 5-20.
4) Remove the screen motor with the bracket, and disconnect the connector.

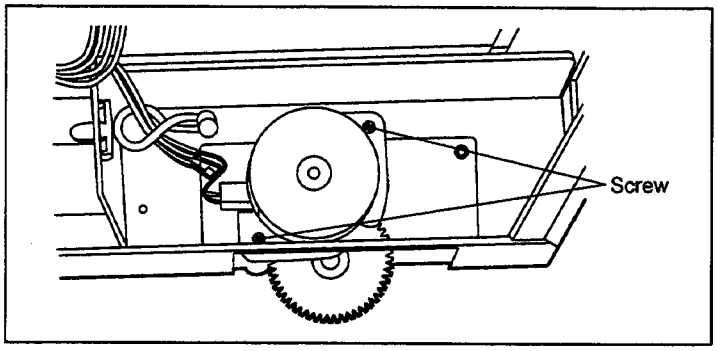


Fig. 5-20

5.3.2 Replacing the Power Switch

1) Remove the screen. (See 5.1.1.)
2) Remove the printer. (See 5.1.2.)
3) Remove the printer upper cover.
   (See 5.1.3, steps 1 and 2.)
4) Remove the power switch from the printer base.
   (Pull-out while pressing the locking section)

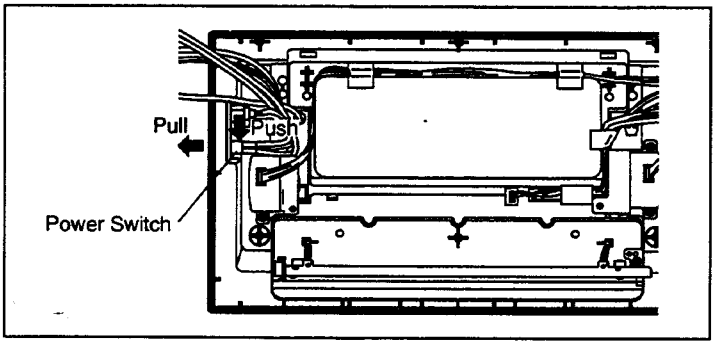


Fig. 5-21

5.3.3 Replacing the Cutter Motor

1) Remove the screen. (See 5.1.1.)
2) Remove the printer. (See 5.1.2.)
3) Remove the printer upper cover.
   (See 5.1.3, steps 1 and 2.)
4) Remove the power switch. (See 5.3.2, step 4.)
5) Remove 2 screws, as shown in Fig. 5-22, and remove the cutter motor with the bracket.

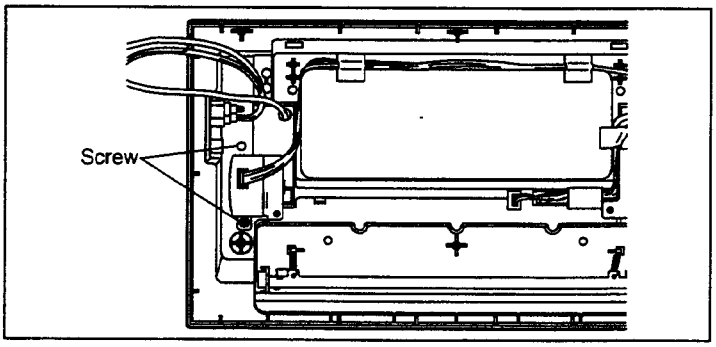


Fig. 5-22

6) Remove 2 screws and 2 nuts shown in Fig. 5-23.
7) Remove the cutter motor and disconnect the connector.

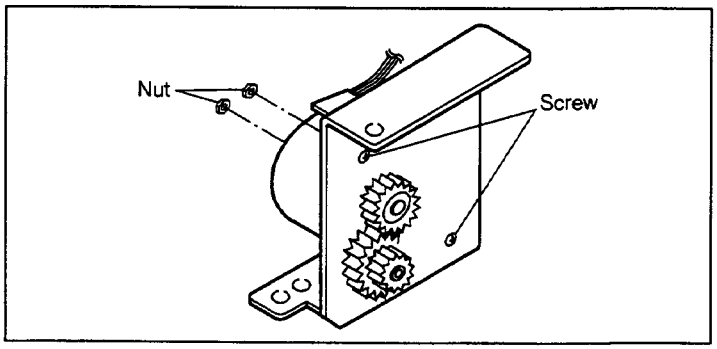


Fig. 5-23

5.3.4 Replacing the Printer Motor

1) Remove the screen. (See 5.1.1.)
2) Remove the printer. (See 5.1.2.)
3) Remove the printer upper cover. (See 5.1.3, steps 1 and 2.)
4) Remove 2 screws, as shown in Fig. 5-24, and remove the printer motor with the bracket.

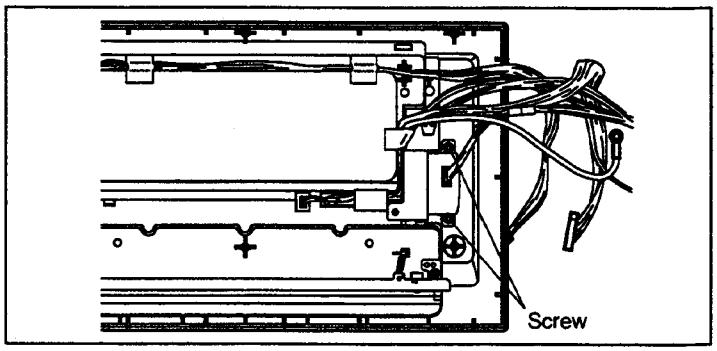


Fig. 5-24

5) Remove 2 screws shown in Fig. 5-25.
6) Remove the printer motor and disconnect the connector.

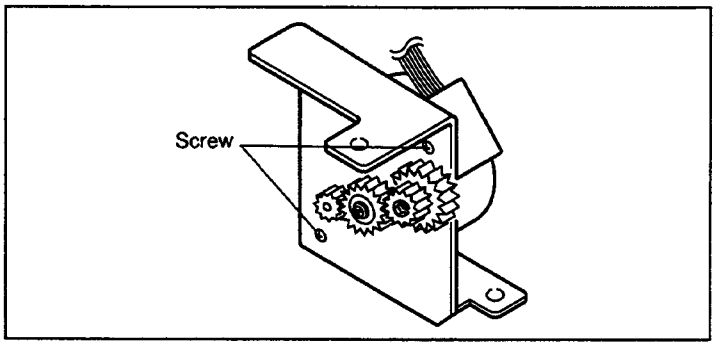


Fig. 5-25

5.4 Replacing the Circuit Board Assembly

5.4.1 Replacing the CONTROL Board

1) Remove the screen. (See 5.1.1.)
2) Remove the CONTROL Board cover.
   (See 5.1.2, steps 2, 3 and 5.)
3) Disconnect 8 connectors CN1–CN7, CN9.
   Note: If the optional board is installed, disconnect the connector CN8.
4) Remove 4 screws, as shown in Fig. 5-26, and remove the CONTROL Board.

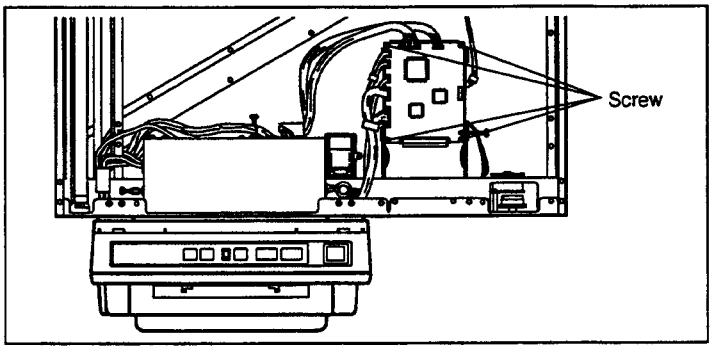


Fig. 5-26

5.4.2 Replacing the CCD Board

1) Remove the screen. (See 5.1.1.)
2) Remove the optical unit cover.
   (See 5.1.2, steps 2 and 3.)
3) Disconnect the connector CN100.
4) Remove 4 screws, as shown in Fig. 5-27, and remove the CCD block (assembly).

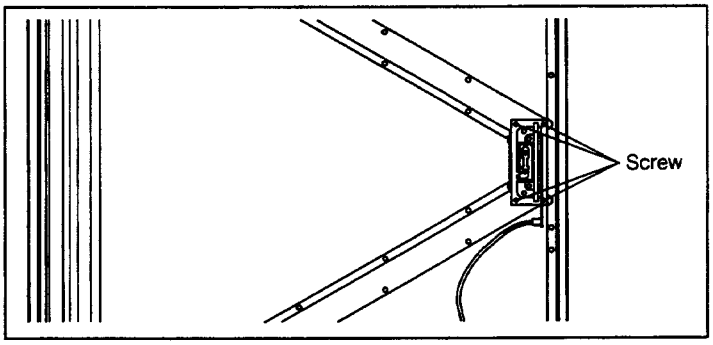


Fig. 5-27

5) Remove 2 screws, as shown in Fig. 5-28, and remove the CCD Board.

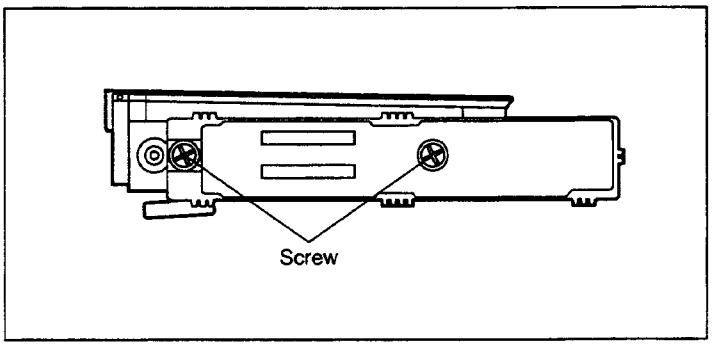


Fig. 5-28

5.4.3 Replacing the HOME-SENSOR Board

1) Remove the screen. (See 5.1.1.)
2) Remove the CONTROL Board cover.
   (See 5.1.2, steps 2, 3 and 5.)
3) Disconnect the connector CN3 on the CONTROL Board.
4) Remove 2 screws, as shown in Fig. 5-29, and remove the HOME-SENSOR Board with the holder.
   Note: Use a screwdriver, with a long shaft (20 cm/ 8 inches).

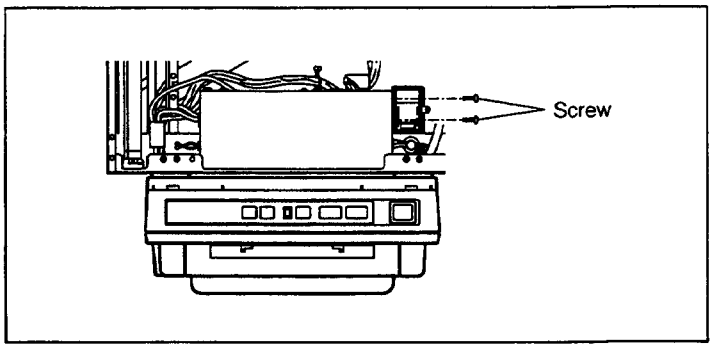


Fig. 5-29

5) Remove 1 screw, as shown in Fig. 5-30, and remove the HOME-SENSOR Board.

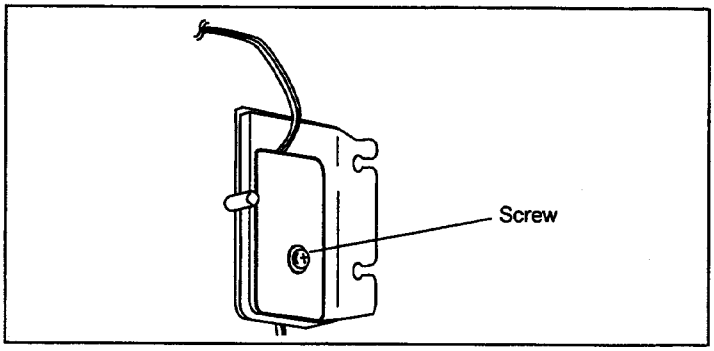


Fig. 5-30

5.4.4 Replacing the POWER Board

1) Remove the screen. (See 5.1.1.)
2) Remove the POWER Board cover. (See 5.1.2, steps 2 through 4.)
3) Disconnect 8 connectors CN400–CN407.
4) Remove 2 screws (A), as shown in Fig. 5-31, then release the ground lugs.
5) Remove 9 screws (B), as shown in Fig. 5-31, and remove the POWER Board.

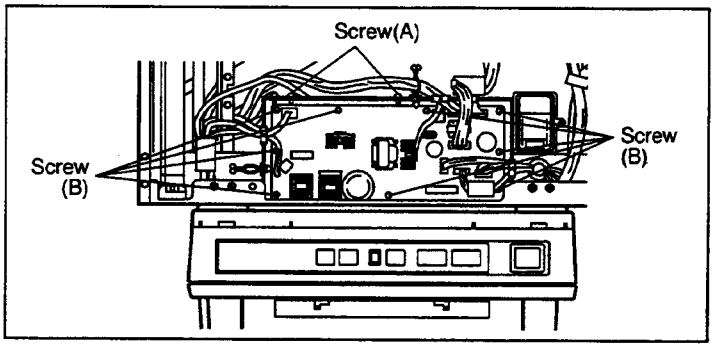


Fig. 5-31

5.4.5 Replacing the PANEL Board

1) Remove the screen. (See 5.1.1.)
2) Remove the printer. (See 5.1.2.)
3) Remove the printer upper cover. (See 5.1.3, steps 1 and 2.)
4) Remove 4 screws shown in Fig. 5-32.
5) Remove the PANEL Board and disconnect the connector CN200.

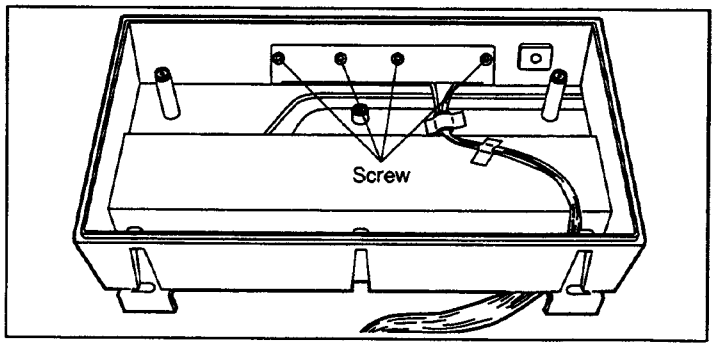


Fig. 5-32

5.5 Re-assembling Note

5.5.1 Re-assembling the Printer

Panel Harness

Pass the harness through the core, and secure it using tape as shown in Fig. 5-33.

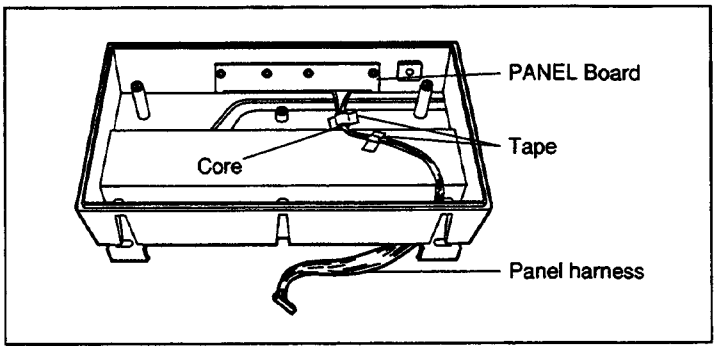


Fig. 5-33

Power Switch Harness

Position the 4 protection tubes closely to the power switch as shown in Fig. 5-34.

Note: The tubes insulate primary wires from secondary wires.

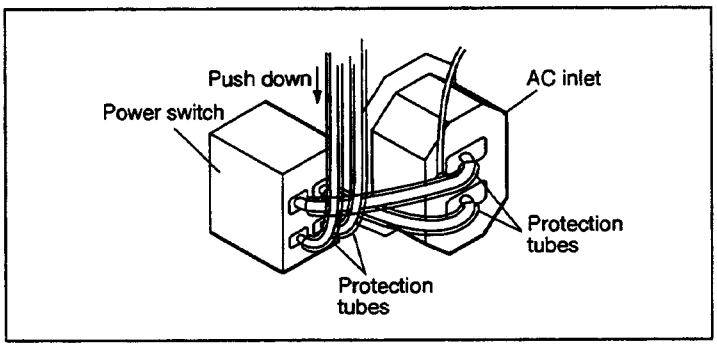


Fig. 5-34

Cutter Motor Harness / Cutter Home Sensor Harness

Secure the harnesses using tape (A) as shown in Fig. 5-35.

Thermal Head Harness / Paper Empty Sensor Harness

Attach the sleeve ferrite clamp to the thermal head harness. Then, secure the thermal head harness and the paper empty sensor harness using tape (B) as shown in Fig. 5-35.

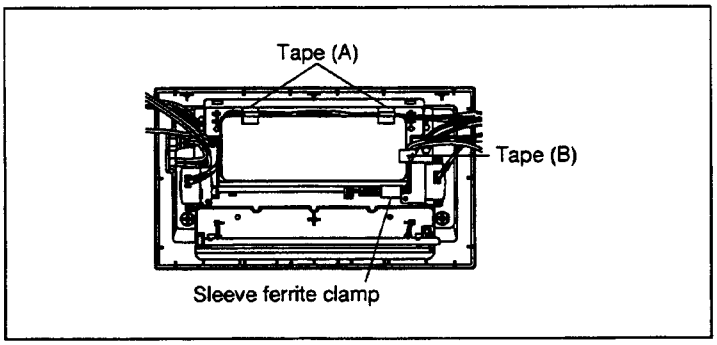


Fig. 5-35

5.5.2 Re-assembling the Optical Unit

Screen Motor Harness

Pass the harness behind the CONTROL Board bracket, and secure it using the harness clamp and tape as shown in Fig. 5-36.

Note: The harness should be secured by tape so that the harness does not touch the edge "A" shown in Fig. 5-36.

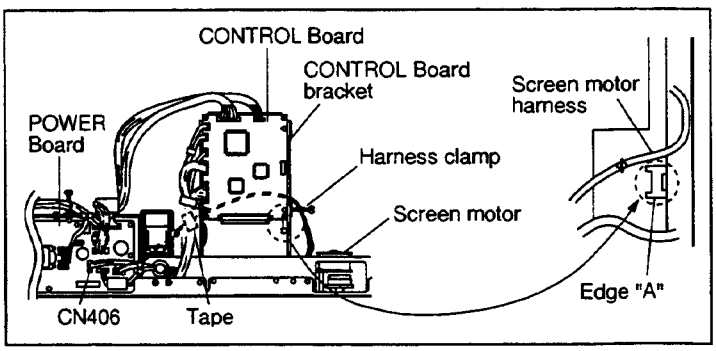


Fig. 5-36

CCD Harness

Secure the harness using tape as shown in Fig. 5-37. Then, wind it once around the toroidal ferrite clamp and the core as shown in Fig. 5-37.

Note: The toroidal ferrite clamp and the core should be positioned as closely to the CONTROL Board as possible.

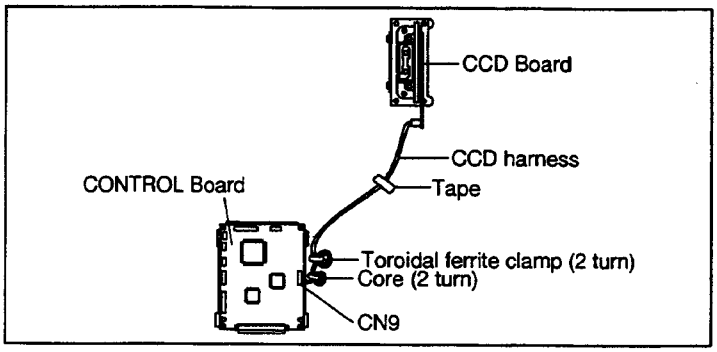


Fig. 5-37

Sensor Harness

Wind three harnesses once around the core as shown in Fig. 5-38.

Note: The three harnesses are as below:

- Screen home sensor harness from HOME-SENSOR Board to CN3
- Paper empty sensor harness from the printer to CN4
- Cutter home sensor harness from the printer to CN5

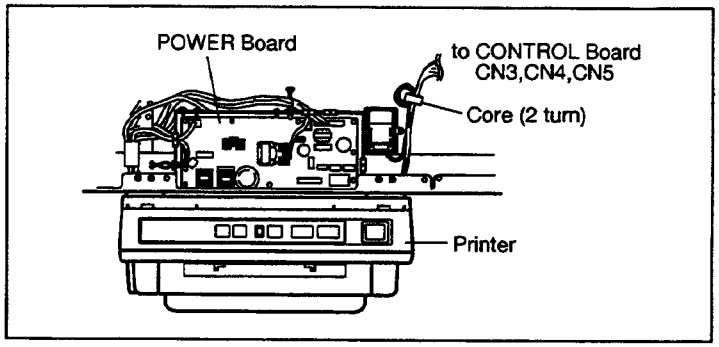


Fig. 5-38

Panel Harness

Wind the harness once around the core as shown in Fig. 5-39.

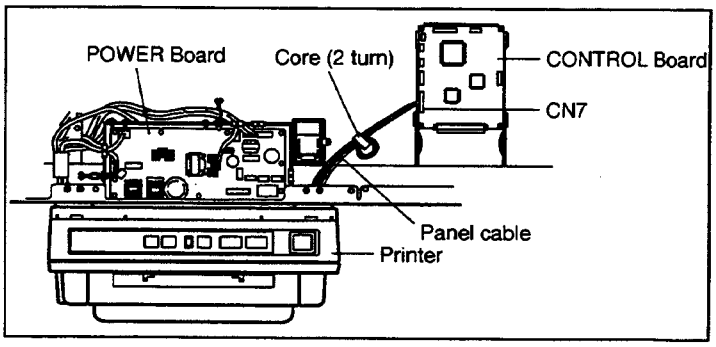


Fig. 5-39

Thermal Head Harness

Wind the harness to Control Board and the harness to POWER Board once around the toroidal ferrite clamps respectively as shown in Fig. 5-40.

Note: The thermal head harness has three connectors which are connected to:

- Thermal head (in the printer)
- CN6 on CONTROL Board
- CN407 on POWER Board

The harness to CONTROL Board is taped with copper film. When attaching the CONTROL Board cover, clamp the taped portion and screw onto the CONTROL Board bracket.

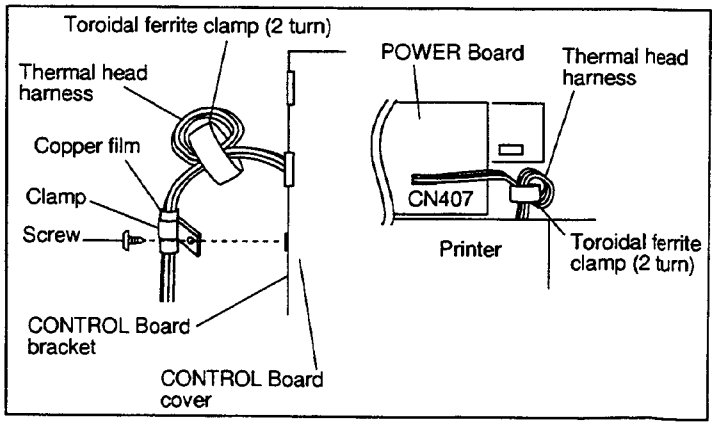


Fig. 5-40

Harnesses between POWER and CONTROL Boards

Wind the power harness (with 4-pin connector) once around the core near CONTROL Board. Next, secure the power harness and the motor control harness (with 14-pin connector) using tape and the harness clamp as shown in Fig. 5-41. Then, attach the sleeve ferrite clamp to them.

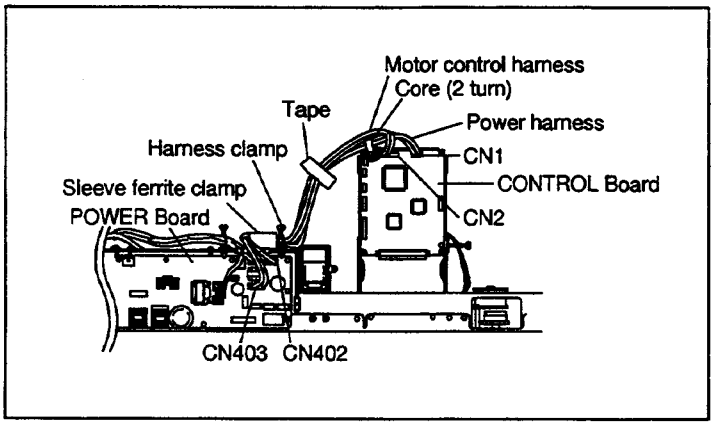


Fig. 5-41

Cutter Motor Harness / Printer Motor Harness

Attach the sleeve ferrite clamp to the cutter motor harness. Attach the sleeve ferrite clamp to the printer motor cable in the POWER Board bracket, and secure the clamp using tape as shown in Fig. 5-42.

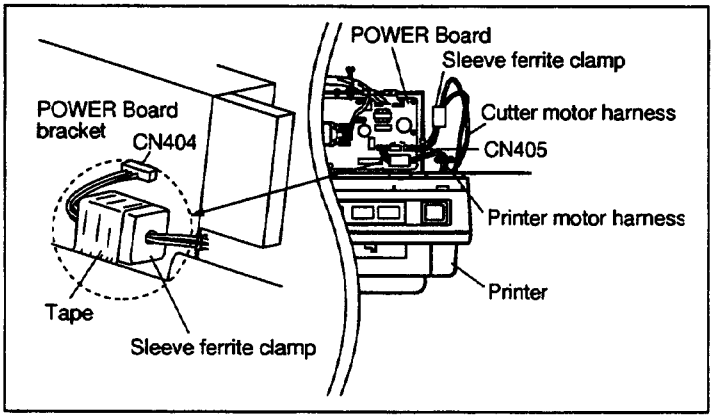


Fig. 5-42

Power Switch Harness

Wind the harness once around the sleeve ferrite clamp as shown in Fig. 5-43.

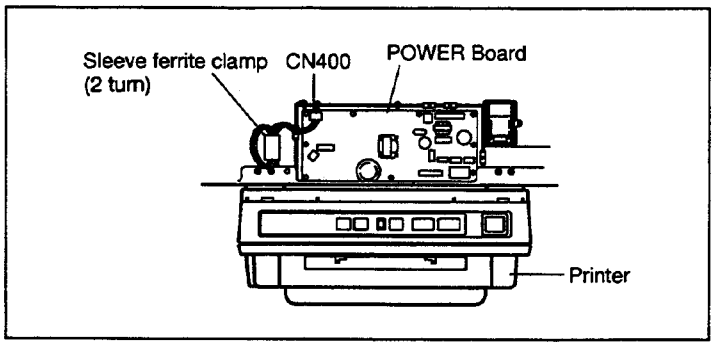


Fig. 5-43

Fluorescent Lamp Harness

Pass the harness behind the mirror plate, and secure it using the harness hook and the harness clamp as shown in Fig. 5-44.

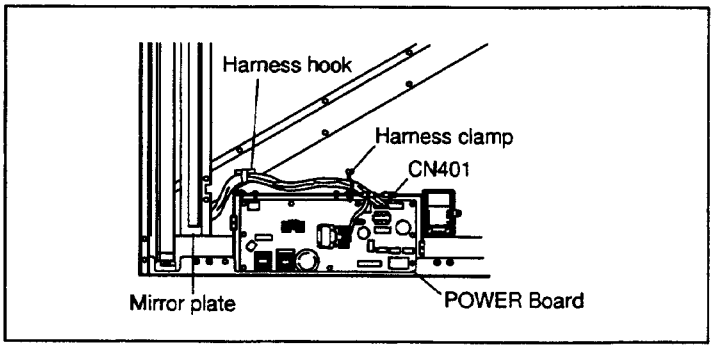


Fig. 5-44

SECTION 6
ADJUSTMENTS

6.1 Test Mode

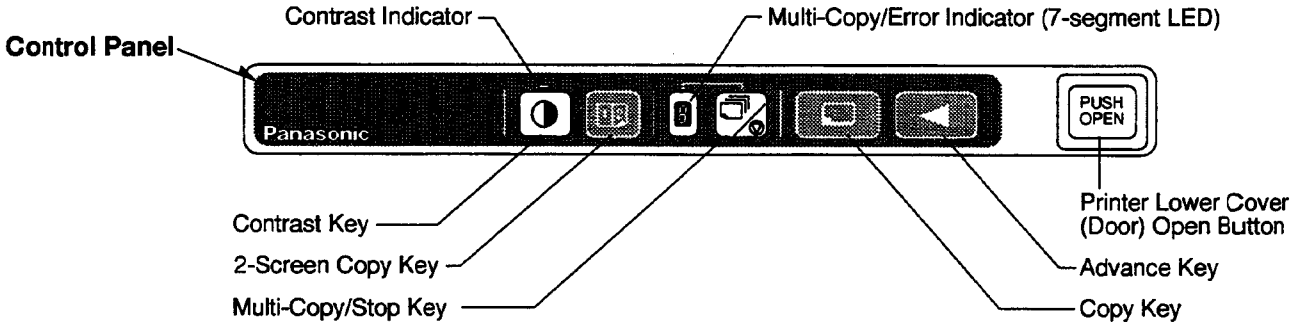
6.1.1 Entering the Test Mode

While pushing the Copy and Advance keys, turn ON the power switch.

6.1.2 Escaping the Test Mode

Turn OFF the power switch.

6.1.3 Functions in the Test Mode



Contrast Indicator	During to select Test Item: Flashes ON and OFF During to select Set Value / During execution: OFF
Multi-Copy/Error Indicator	Test Item / Set Value display
Contrast Key	Special
2-Screen Copy Key	–
Multi-Copy/Stop Key	+
Copy Key	Execute test
Advance Key	Stop test

6.1.4 Operation in the Test Mode

1. Push – or + key to select desired Test Item.
2. Push Execution key.
3. Push – or + key to select desired Set Value.
4. Push Execution key.
   Changes the Set Value, and returns to the same as that in step 1.

Notes:
- If you want to discontinue, push Release key.
- If the Test Item has no Set Value (for example A: CCD adjustment), the functional motion starts at step 2.

6.1.5 Table of Test Item

Test Item	Indication	Function	Set Value	Description
A		CCD adjustment	—	Adjusts the CCD. (See 6.3.1)
B		Model identification	0	KX-B530 Series
			1	KX-B630 Series
			2	KX-B430 Series
C		Paper size setting	0	Letter seize
			1	A4 size
D		1-screen copy Print size setting	0	Fixed (Length/Breadth is fixed to the paper size.)
			1	Proportional (Length/Breadth proportions to the screen size.)
E		2-screen copy Print size setting	0	Fixed (Length/Breadth is fixed to the paper size.)
			1	Proportional (Length/Breadth proportions to the screen size.)
F		Test pattern print	—	Prints the test pattern. (See 6.3.7)
G		Continuous monitor	—	Continuously executes motions below: → 9 pages multi-copy → Screen advance → 5 minutes pause Repeat

6.2 Error Code

Error Code	Indication	Error Name	Cause	Remedy
O		ROM error	ROM data is abnormal.	Replace the CPU.
A		RAM error	Does not access normally to CPU built-in RAM.	Replace the CPU.
B		Backup memory (EEPROM) error	Data in EEPROM is ruined.	Turn power OFF, and ON again. Returning to normal condition, set up valued data into the EEPROM. If not, replace the EEPROM.
M		Memory error	Does not access normally to DRAM.	Replace the DRAM.
I		Image processor error	LSI for image processing is abnormal.	Replace the LSI.
T		T/H temp. error	Temperature of the thermal head is too high.	Turn power OFF, after a while, turn power ON again.
L		Light intensity error	Low temperature (10 °C [50 °F] or less)	Raise the room temperature.
			Fluorescent lamp is too dark.	Replace the fluorescent lamp.
S		Screen error	Screen dose not move.	Remove any chart taped to the screen. Try to move the screen by hand.
			Does not detect the home position.	Check the screen home marker. Check the screen home sensor.
P		Paper error	No paper	Load the copy paper roll.
			Printer door is not closed securely.	Close the door securely.
C		Cut error	Paper jam	Clear the jammed paper.
			Cutter dose not operate.	Check the paper thickness. Check the mechanical condition.

Note: Indication flashes ON and OFF.

6.3 CCD Adjustment

6.3.1 Preparation

Screen Tool Installation

Remove the screen (see 5.1.1) and the CCD cover (remove 4 screws shown in Fig. 6-1).
Attach the Screen Tool to the optical unit as follows (see Fig. 6-1):

1. Install the Screen Tool so that the "7 lines area" is on the left side and facing the mirror.
2. Install the wing bolt through the screen tool upper bracket into the scanner/printer. Do not tighten.
3. Install the wing bolt through the screen tool lower bracket into the scanner/printer and tighten.
4. While pushing the upper bracket upward, tighten the upper wing bolt so there is no slack in the screen tool film.

Test Equipment Setting

Connect and set an oscilloscope as follows:

- CH1 to TP102 [DC Normal, Mode 0.5 V/div]
- CH2 to TP101 [DC Normal, Mode 5 V/div]
- GND to TP100
- Time is 1 ms/div.

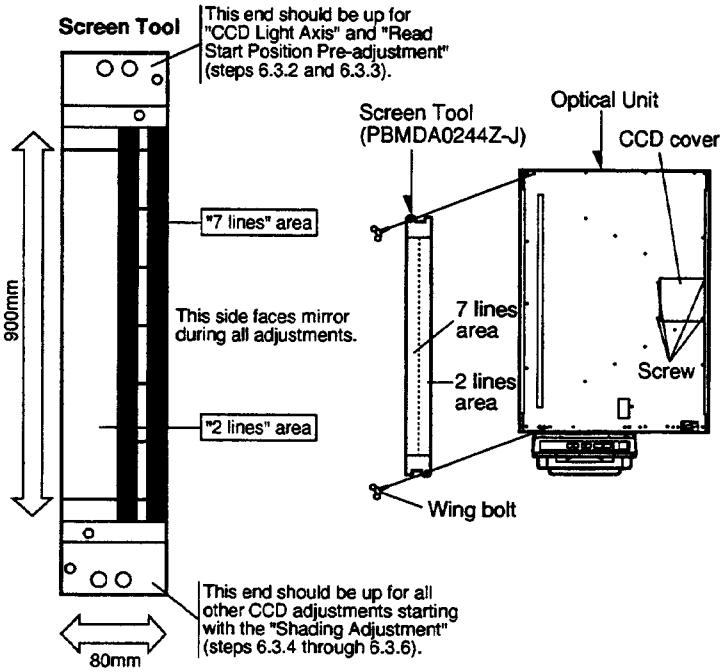

Screen Tool
This end should be up for "CCD Light Axis" and "Read Start Position Pre-adjustment" (steps 6.3.2 and 6.3.3).
Screen Tool (PBMDA0244Z-J)
Optical Unit
CCD cover
"7 lines" area
900mm
This side faces mirror during all adjustments.
7 lines area
2 lines area
Screw
"2 lines" area
Wing bolt
This end should be up for all other CCD adjustments starting with the "Shading Adjustment" (steps 6.3.4 through 6.3.6).
80mm

Fig. 6-1

Entering the Test Mode (See 6.1)

While pushing and holding the "Copy" and "Advance" keys, turn the power switch ON. (The unit is now in "Test" mode, see the chart on page 6-2, titled "6.1.5 Table of Test Item".) The first selection in the test mode is "A", or "CCD Adjustment" (see the chart below).

CCD Adjustment Modes

Keys used	Multi-Copy Indicator	Contrast Indicator	Comment
Copy+Advance	A	Flashing	"Test" mode is selected
Copy	A	OFF	Lamp turns "ON", CCD is energized
Contrast+Copy (First time)	A	OFF	"Read Start Position" emulation
Contrast+Copy (Second time)	A	OFF	"Read Width" emulation
Contrast+Copy (Third time)	A	Flashing	Return to "Test" mode (first step, above)

Note: Clean the locking point used in production from all surfaces before trying any adjustment.

6.3.2 CCD Light-axis Adjustment

1. Make sure the "7 lines" area is located on the left side of the Screen Tool, facing the mirror.
2. Loosen 2 screws A shown in Fig. 6-2, and push the optical plate open as far as it will go.
3. Loosen 2 screws B shown in Fig. 6-2.
4. Press the "Copy" key to turn ON the fluorescent lamp.

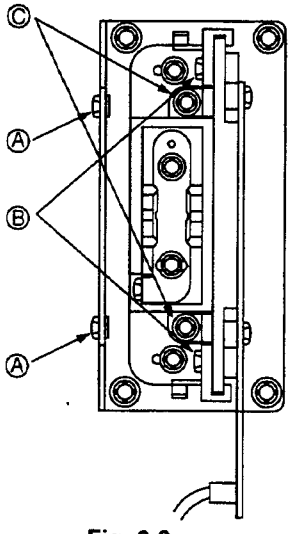
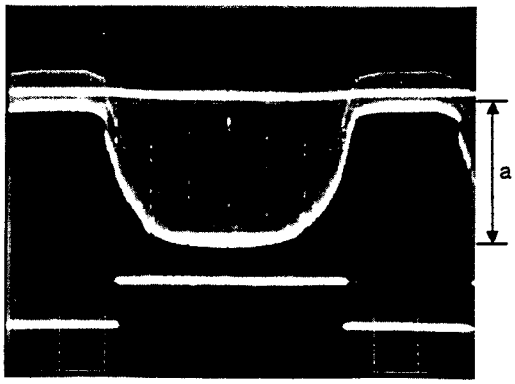


Fig. 6-2

5. Adjust CCD light-axis by rotating 2 screws C shown in Fig. 6-2 (by shifting the CCD holder) so that the waveform shown in Fig. 6-3 is obtained on the oscilloscope.
   Note: Adjustment is not correct when the waveform shown in Fig. 6-4 to Fig. 6-6 is obtained.

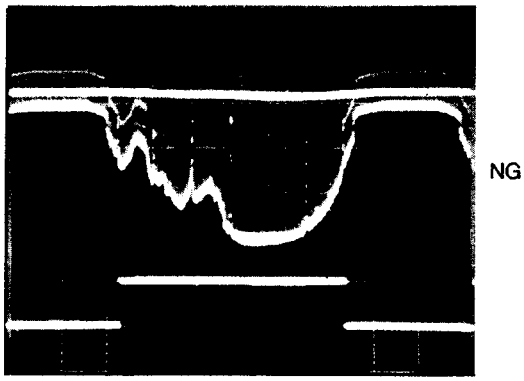
CH1 (TP102: CCD)



Wavefrom is symmetrical and constant. (a = 1.2 V or more)

Fig. 6-3

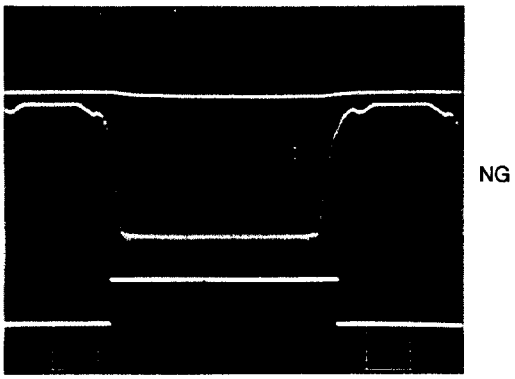
CH1 (TP102: CCD)



Right and left are asymmetrical.

Fig. 6-4

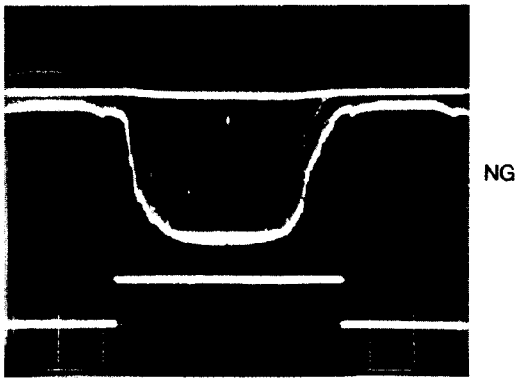
CH1 (TP102: CCD)



Line is invisible.

Fig. 6-5

CH1 (TP102: CCD)



Both sides are unreadable.

Fig. 6-6

6. Tighten 2 screws B.

6.3.3 Read Start Position Pre-adjustment

1. Loosen 2 screws A shown in Fig. 6-7.
2. Execute rough adjustment of the reading start position by rotating screw B shown in Fig. 6-7 (by sliding the lens forward and backward) so that the waveform shown in Fig. 6-8 is obtained on the oscilloscope.

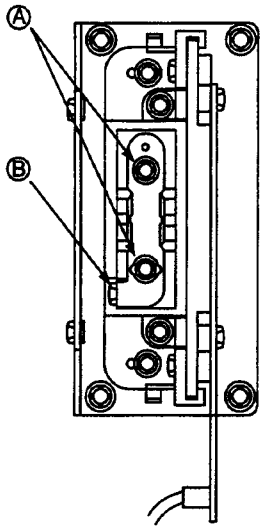
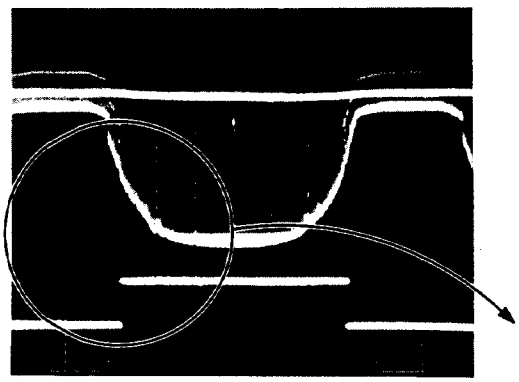


Fig. 6-7

CH1 (TP102: CCD)



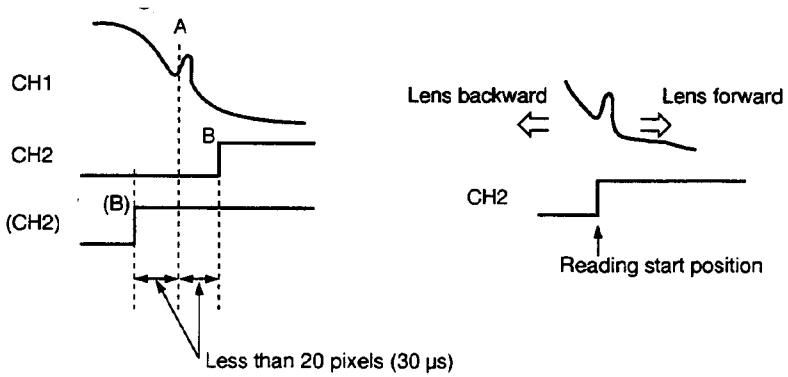


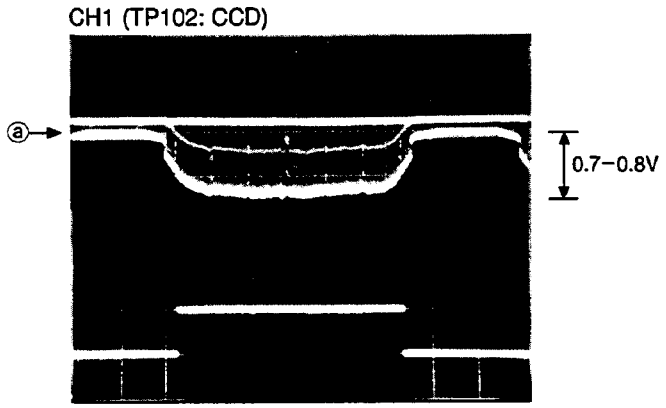
Fig. 6-8

3. Tighten 2 screws A.

6.3.4 Shading Adjustment

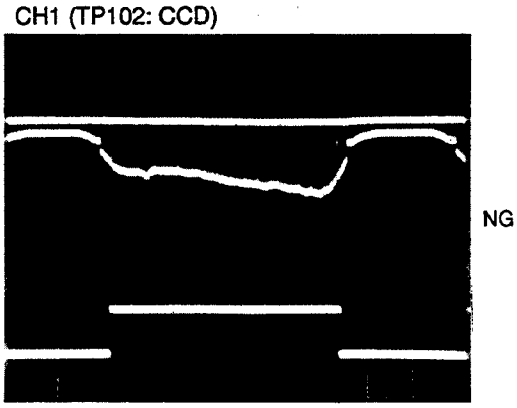
(Note: The fluorescent lamp is still ON from step 6.3.2 above.)

1. Remove the Screen Tool, and re-install it with the "2 lines" area to the left (this requires that you turn the Screen Tool upside-down compared to how it was installed for the first steps of this procedure). See section 6.3.1.
2. At this time, the optical plate should be fully open (section 6.3.2, step 2 above).
3. Adjust the optical plate closed a little at a time until a symmetrical 0.7–0.8 V waveform is obtained (see Fig. 6-9).
   Note: If the waveform is not symmetrical, uneven copy density will result in "dark" exposure mode. The darkness of the output is proportionate to the measured voltage.
4. Tighten 2 screws A shown in Fig. 6-2.
5. Recheck the waveform as a final confirmation.



Using "a" as a base line, adjust the peak to 0.7–0.8 V and the waveform runs parallel (right and left are symmetrical).

Fig. 6-9



Inclined

Fig. 6-10

6.3.5 Read Start Position Adjustment

1. While holding the "Contrast" key depressed, press the "Copy" key to enter the "Read Start Position" emulation mode. (See the "CCD Adjustment Modes" chart above.)
2. By repeatedly pressing either the "Multi-Copy" or the "2-Screen" key, change the relationship between the first "bump" on the falling CCD signal and the rising edge of the "SDE" signal. The goal is the align these signals as shown in Fig. 6-11 below.
3. Confirm proper alignment by using the x10 magnification mode on the oscilloscope.

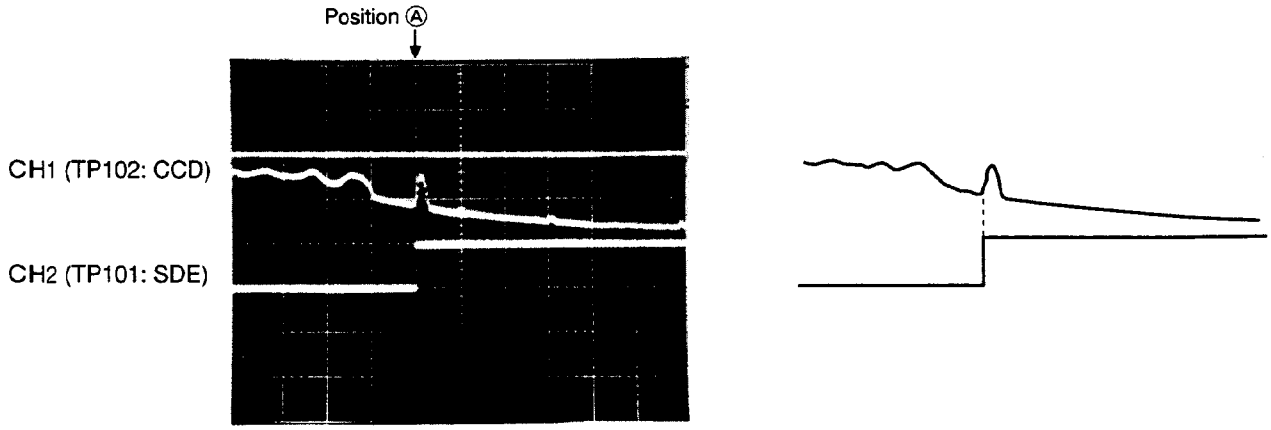


Fig. 6-11

6.3.6 Reading Width Adjustment

1. While holding the Contrast key depressed, press the "Copy" key (for the second time) to enter the "Read Width" emulation mode. (See the "CCD Adjustment Modes" chart above.)
2. By repeatedly pressing either the "Multi-Copy" or the "2-Screen" key, change the relationship between the last "bump" on the rising CCD signal and the falling edge of the "SDE" signal. After aligning these signals as shown in the left of Fig. 6-12 below, press the "Multi-Copy" key three times to shift the waveform as shown in the right of Fig. 6-12.
3. Confirm proper alignment by using the x10 magnification mode on the oscilloscope.

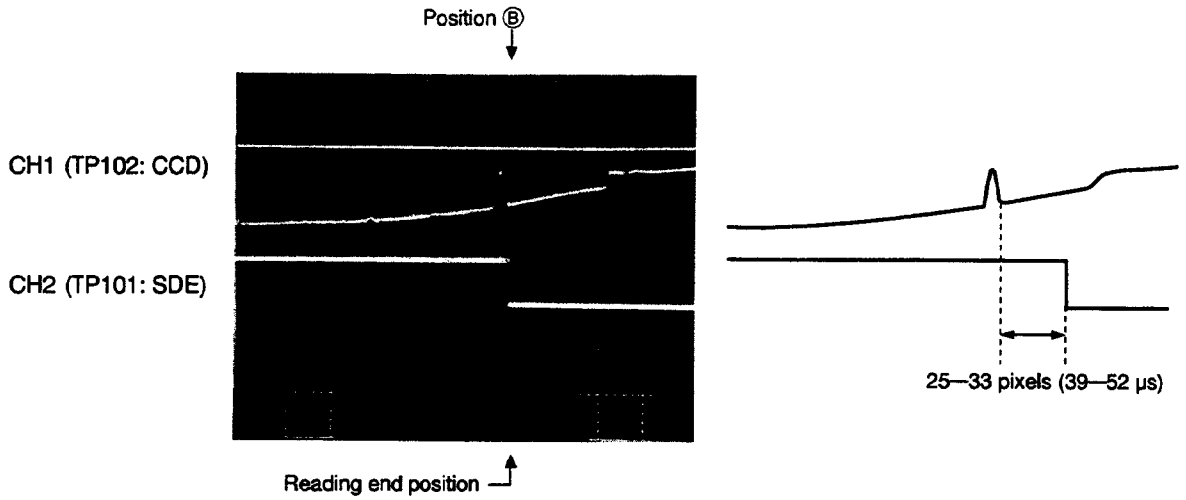


Fig. 6-12

4. Check the shading waveform.
   Make sure that b/a × 100 (%) and c/a × 100 (%) are more than 40% respectively.

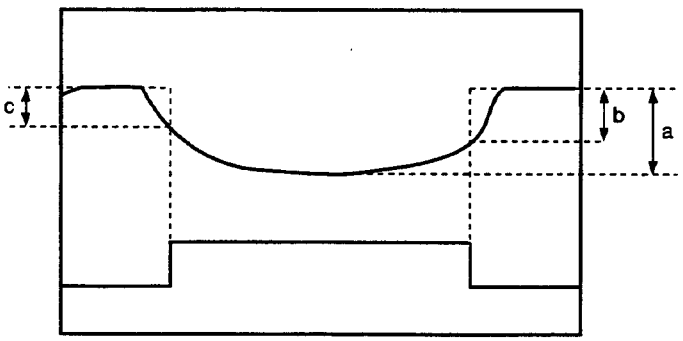


Fig. 6-13

Note: If they are under 40%, turn power OFF and execute the adjustment again from "Entering the Test Mode" in 6.3.1 Preparation.

5. While pushing the Contrast key, then push the Copy key to finish adjustments.

6.3.7 Test Pattern Print and Confirmation

1. Push the Multi-Copy/Stop key several times to set the indication of Multi-Copy/Error Indicator to "F". Then, push the Copy key to print the test pattern. (It takes approx. 30 seconds for test pattern to be printed.)
2. The CCD adjustment is complete when the left and right vertical lines on the shaded figure are distinguishable.

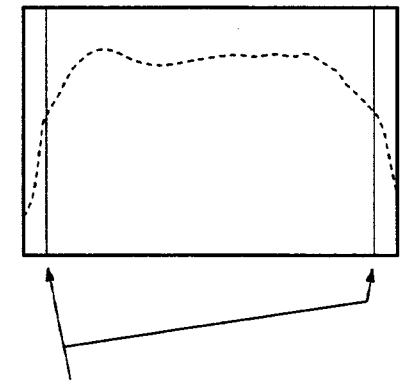


Fig. 6-14

Notes: • When the left vertical line is indistinguishable, the read start position is set too early.
Execute again Read Start Position Pre-adjustment (Slide the lens backward so that the said position shifts by approx. 30 pixels (50 µs) later position). Then, execute again the Read Start Position Adjustment.

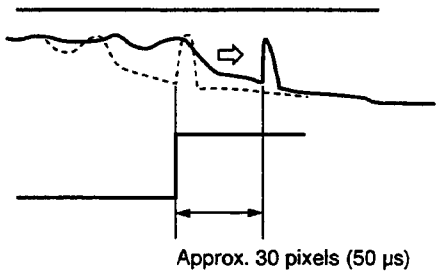


Fig. 6-15

• When the right vertical line is indistinguishable, the read start position is set too late.
Execute again Read Start Position Pre-adjustment (Slide the lens forward so that the said position shifts by approx. 30 pixels (50 µs) earlier position). Then, execute again Read Start Position Adjustment.

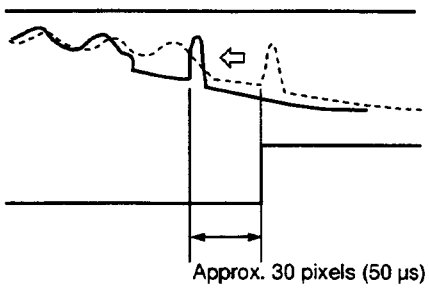


Fig. 6-16

3. While pushing the Contrast key, then push the Advance key.
Turn OFF the power switch to escape the Test Mode.

SECTION 7
TROUBLESHOOTING

7.1 Faulty Function

Symptom

7-segment LED does not turn ON. ..... (A)
Key input does not function. ..... (B)
The paper empty display lamp "P" does not function. (Problem in the paper empty sensor) ..... (C)
The cutter malfunction display lamp "C" does not function. (Problem in the cutter home sensor) ..... (D)
Problem with screen feed ..... (E)
Problem with paper feed ..... (F)
Problem with cutter operation ..... (G)
Problem with the fluorescent lamp ("L" error displayed) ..... (H)
Problem with the screen home sensor ..... (I)

Check from the first symptom in alphabetical order.

(A) 7-segment LED does not turn ON.

Check the +5V power. This will tell you whether or not the problem is in the switching power supply system. For a load circuit/short-circuit do not forget to check when there is no load on the switching power supply (disconnect the output harnesses). Further, if the address bus or the data bus do not operate normally, this will sometimes cause the LED not to flash. Also, please check the IC8, Q2 input signals. (See page 8–14)

(B) Key input does not function.

In this case as well, first check the +5V power. Next, it is necessary to check the CONTROL Board and the PANEL Board.

(C) The paper empty display lamp "P" does not function.

The 7-segment LED should display (turn ON) and when paper is empty, the 7-segment LED should display "P" and should flash ON and OFF.

If the LED does not turn ON, check the CONTROL Board. One section which should be checked is the key input pins on IC1. These pins must be at +5V when the switch is ON, and must be at 0V when the switch is OFF.

(D) The cutter malfunction display lamp "C" flashes ON and OFF, or does not function.

When the cutter is at its home position, the IC1 key input pin signal will be +5V (and at 0V in other positions).

When "C" flashes ON and OFF, if you set the paper and close the cover, the cutter operates. However, the "C" flashing occurs when the cutting operation does not operate normally (sensor ON → OFF → ON).

(E) Problem with screen feed

It is first necessary to check for mechanical problems. Are the motor and gears installed properly? Next check the input and output of the motor driver (IC400).

(F) Problem with paper feed

In this case as well it is first necessary to check for mechanical problems. Then check the input and output of the motor driver (IC401).

(G) Problem with cutter operation

As with (F) above, it is first necessary to check for mechanical problems. Then check the input and output of the motor driver (IC402).

(H) Problem with the fluorescent lamp

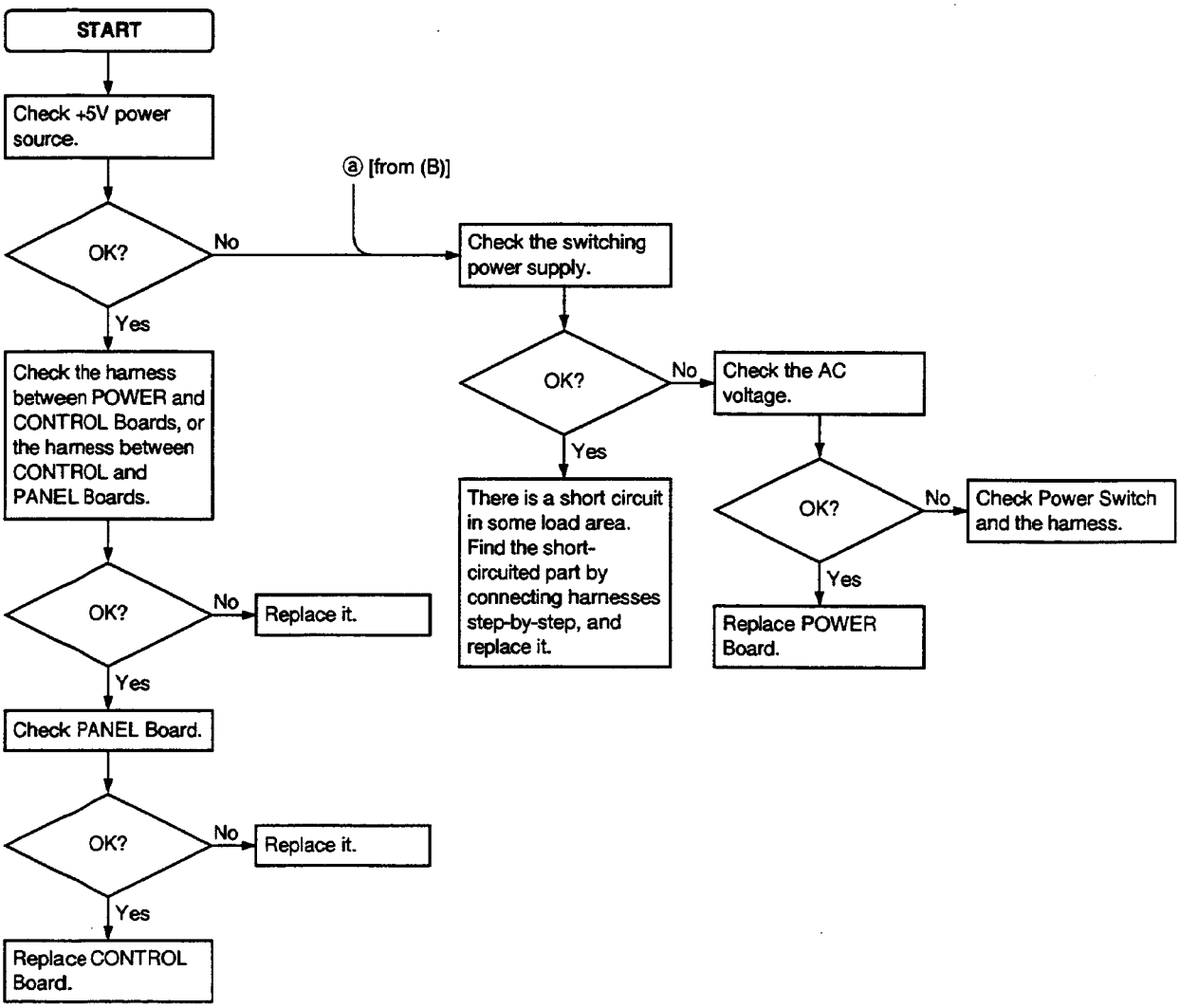
It is necessary to check the input signal LAMPON, PHEAT and the +5V power. If there is no problem, the lamp driver circuit is damaged.

(I) Problem with the screen home sensor

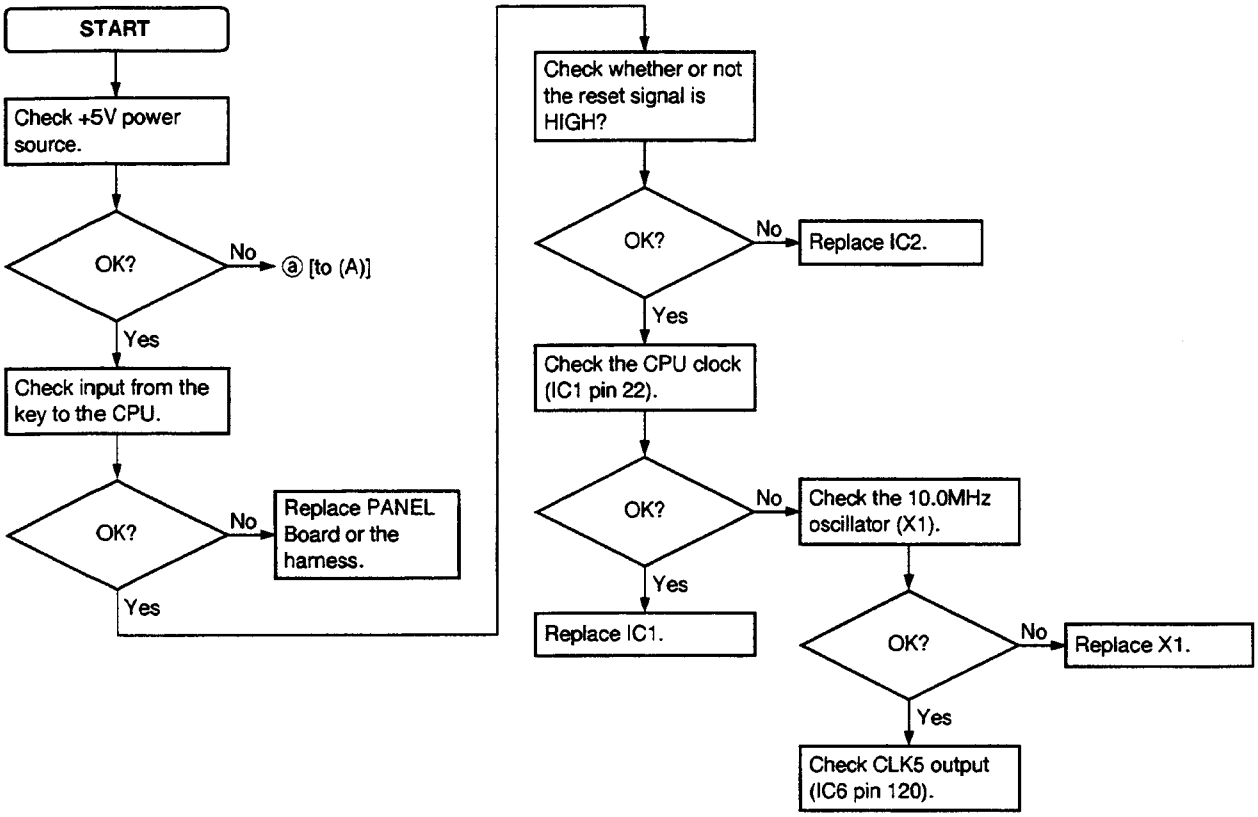
First check the screen home sensor. If the screen is loose, the screen home sensor may not be able to detect the screen home position. If the screen does stop, please check the tension spring screw on the left side of the panel. Next check the HOME-SENSOR Board, and then check the IC6 SENST pin.

Caution: If fuse replacement is required, the same type/rating fuse must be used.

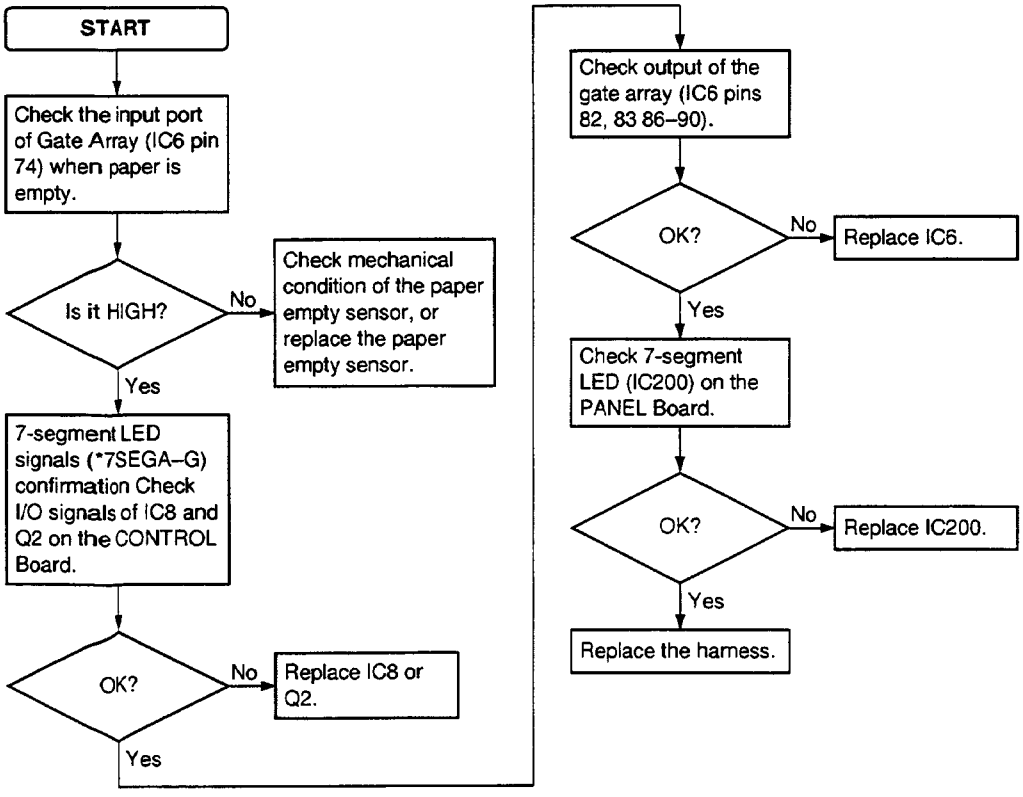
(A) 7-segment LED does not turn ON.



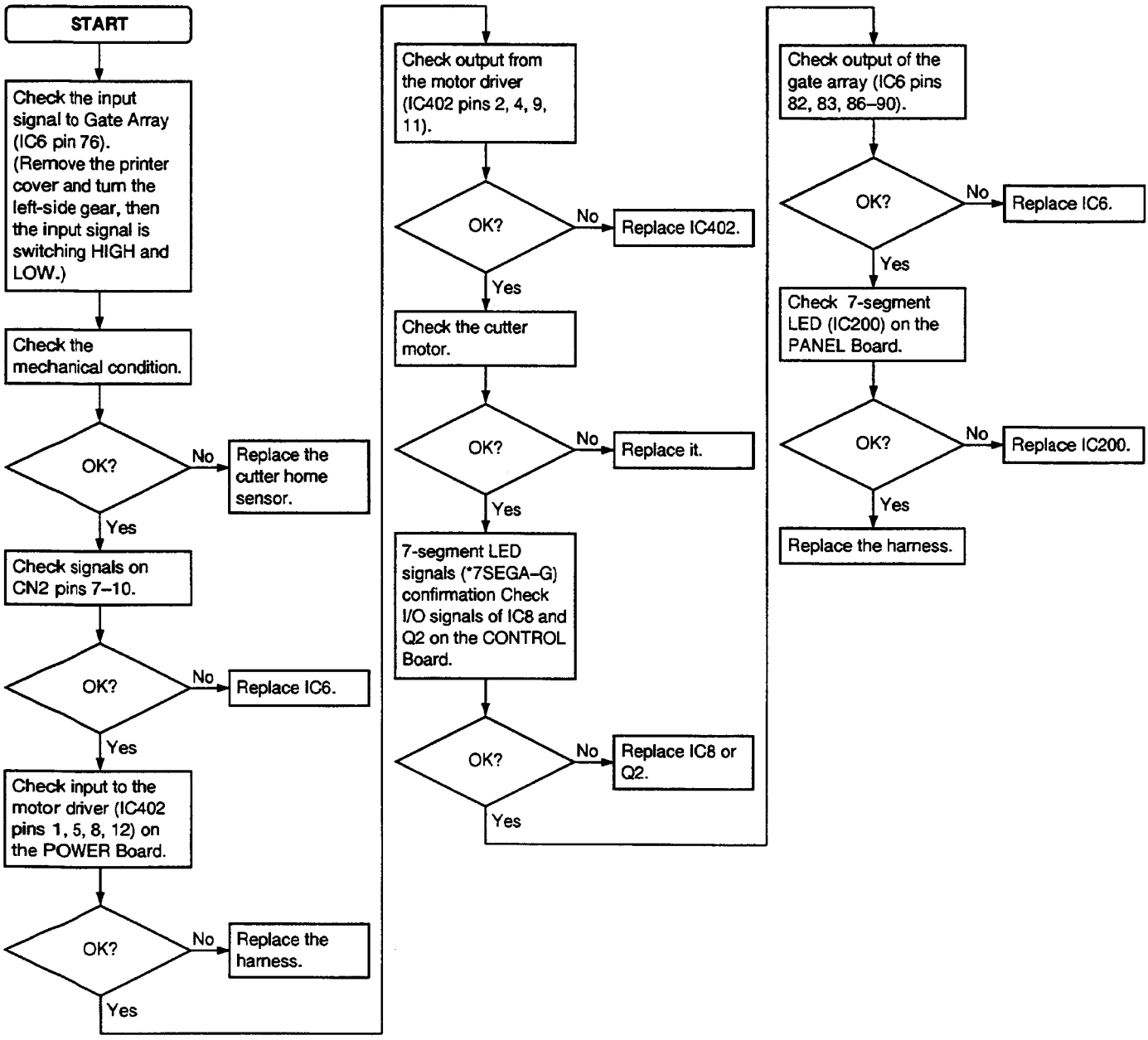
(B) Key input does not function.



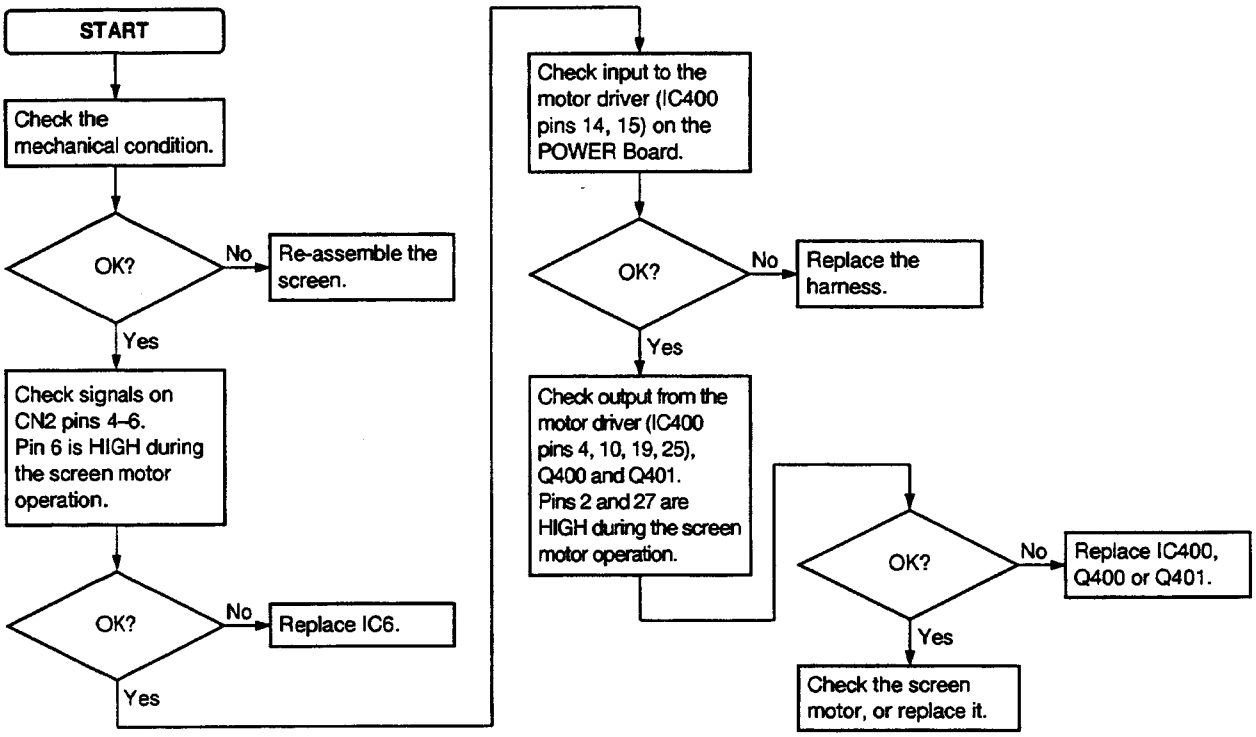
(C) The paper empty display lamp "P" does not function.


START
Check the input port of Gate Array (IC6 pin 74) when paper is empty.
Is it HIGH?
No
Check mechanical condition of the paper empty sensor, or replace the paper empty sensor.
Yes
7-segment LED signals (*7SEGA–G) confirmation Check I/O signals of IC8 and Q2 on the CONTROL Board.
OK?
No
Replace IC8 or Q2.
Yes
Check output of the gate array (IC6 pins 82, 83 86–90).
OK?
No
Replace IC6.
Yes
Check 7-segment LED (IC200) on the PANEL Board.
OK?
No
Replace IC200.
Yes
Replace the harness.

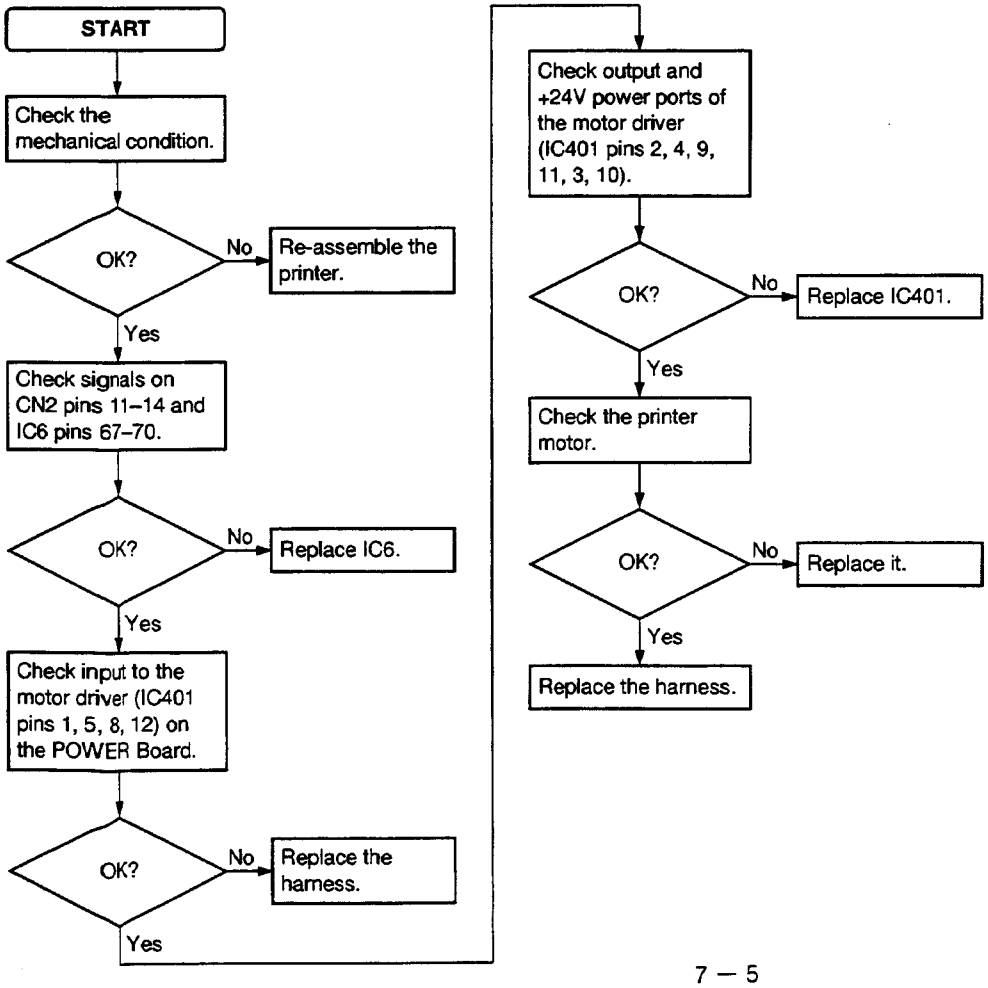
(D) The cutter malfunction display lamp "C" flashes ON and OFF, or does not function.



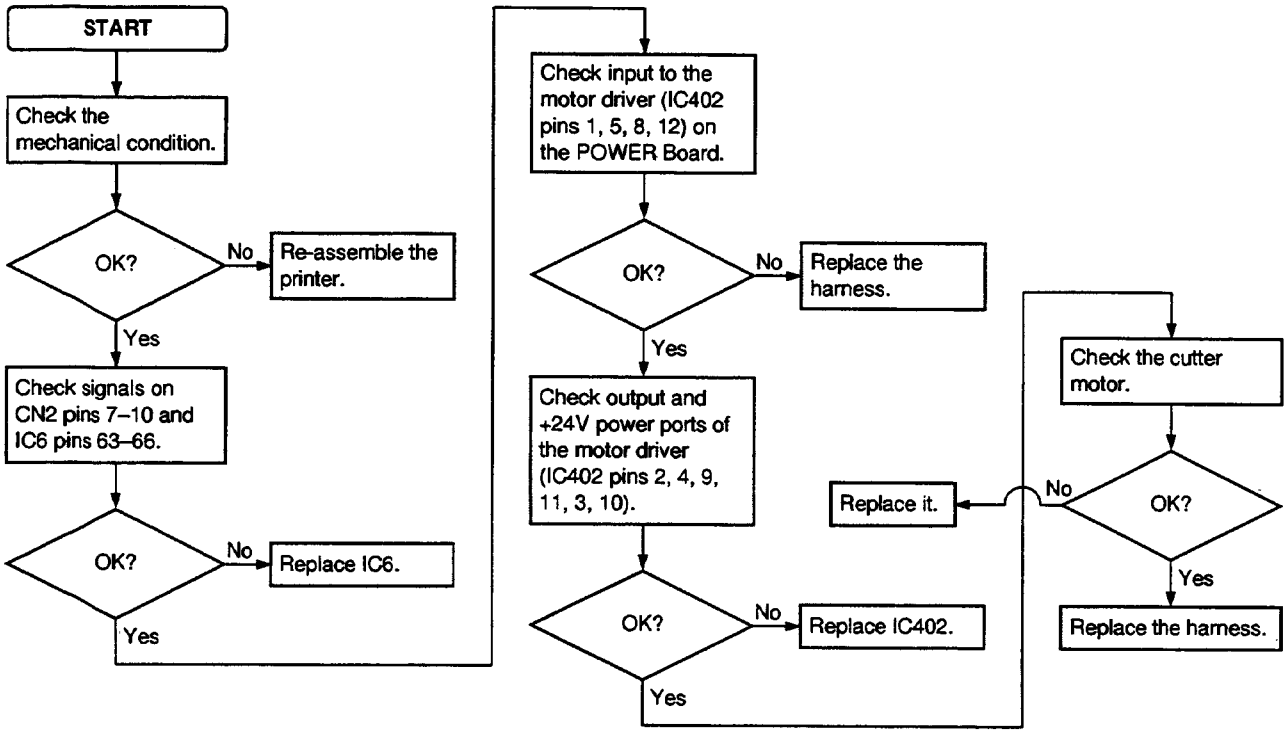
(E) Problem with screen feed


START
Check the mechanical condition.
OK?
No
Re-assemble the screen.
Yes
Check signals on CN2 pins 4–6. Pin 6 is HIGH during the screen motor operation.
OK?
No
Replace IC6.
Yes
Check input to the motor driver (IC400 pins 14, 15) on the POWER Board.
OK?
No
Replace the harness.
Yes
Check output from the motor driver (IC400 pins 4, 10, 19, 25), Q400 and Q401. Pins 2 and 27 are HIGH during the screen motor operation.
OK?
No
Replace IC400, Q400 or Q401.
Yes
Check the screen motor, or replace it.

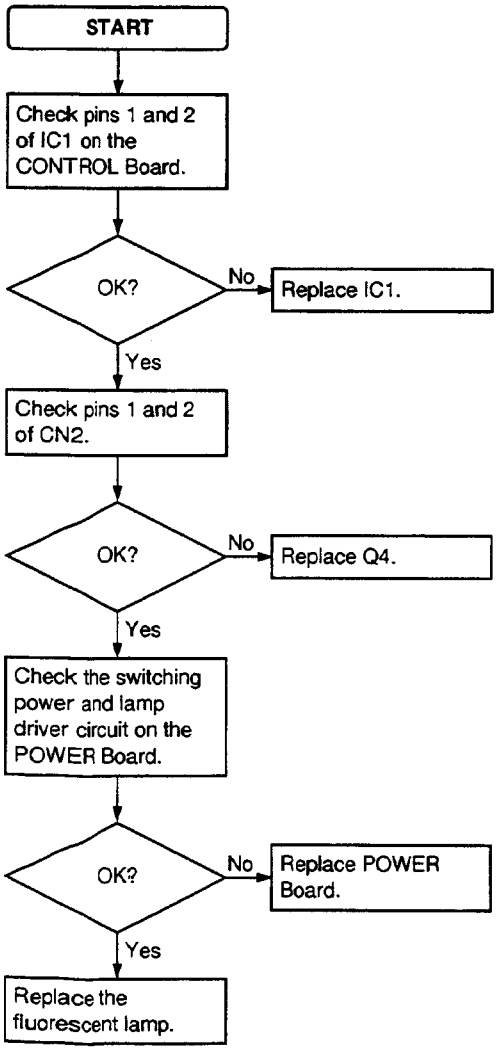
(F) Problem with paper feed



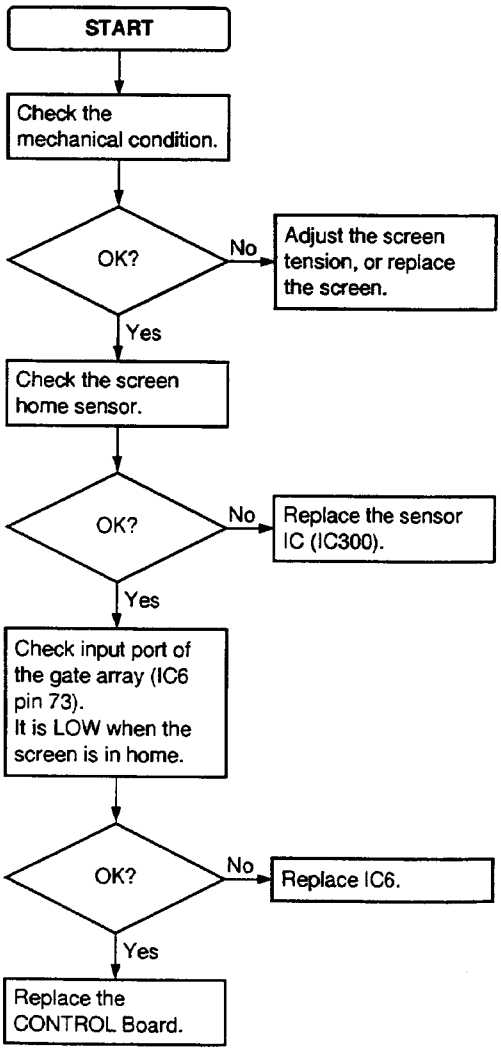
(G) Problem with cutter operation



(H) Problem with the fluorescent lamp



(I) Problem with the screen home sensor



7.2 Faulty Copy

Symptom

Not printing ..... (A)
All black ..... (B)
Dark printing ..... (C)
Faint printing ..... (D)
Density difference between right and left ..... (E)
White line ..... (F)
White band ..... (G)
Black line ..... (H)
Black band ..... (I)

First check the mechanical condition.

Next check the thermal head signals (CN6) and power sources (CN407: 24V/5V). Subsequently verify *THON signal on CN2. During printing, the voltage should be 0V. They will indicate whether the thermal head is faulty or not.

If all the above checks are good, the thermal head is faulty.

If not, check the CCD Board and CONTROL Board.

(A) Not printing

The thermal head signals must be checked.
If they are proper, the thermal head is faulty.

(B) All black

It is very rare that thermal head is faulty.
Perhaps the CCD Board or CONTROL board is bad.

(C) Dark printing

Check the following.

- Faulty optical adjustment
- Lack of light of the fluorescent lamp
- Faulty CCD Board
- Faulty CONTROL Board
- Faulty mechanical condition of the screen
- If a chart is attached, attach it again properly.

(D) Faint printing

Check the following.

- Poor contact between the thermal head and the platen
- Dirty surface on blank area of the screen
- Dirty surface of the mirror
- Dirty surface of the lens
- Dirty surface of the CCD
- Dirty surface of the thermal head
- Faulty optical adjustment
- Faulty CCD Board
- Faulty CONTROL Board

(E) Density difference between right and left

- Poor contact between the thermal head and the platen
- Faulty optical adjustment

(F) White line

- Faulty thermal head
- Dirty surface of the mirror
- Dirty surface of the lens
- Dirty surface of the CCD
- Dirty surface on blank area of the screen

(G) White band

- Strobe pulses must be checked first.
- Faulty thermal head

(H) Black line

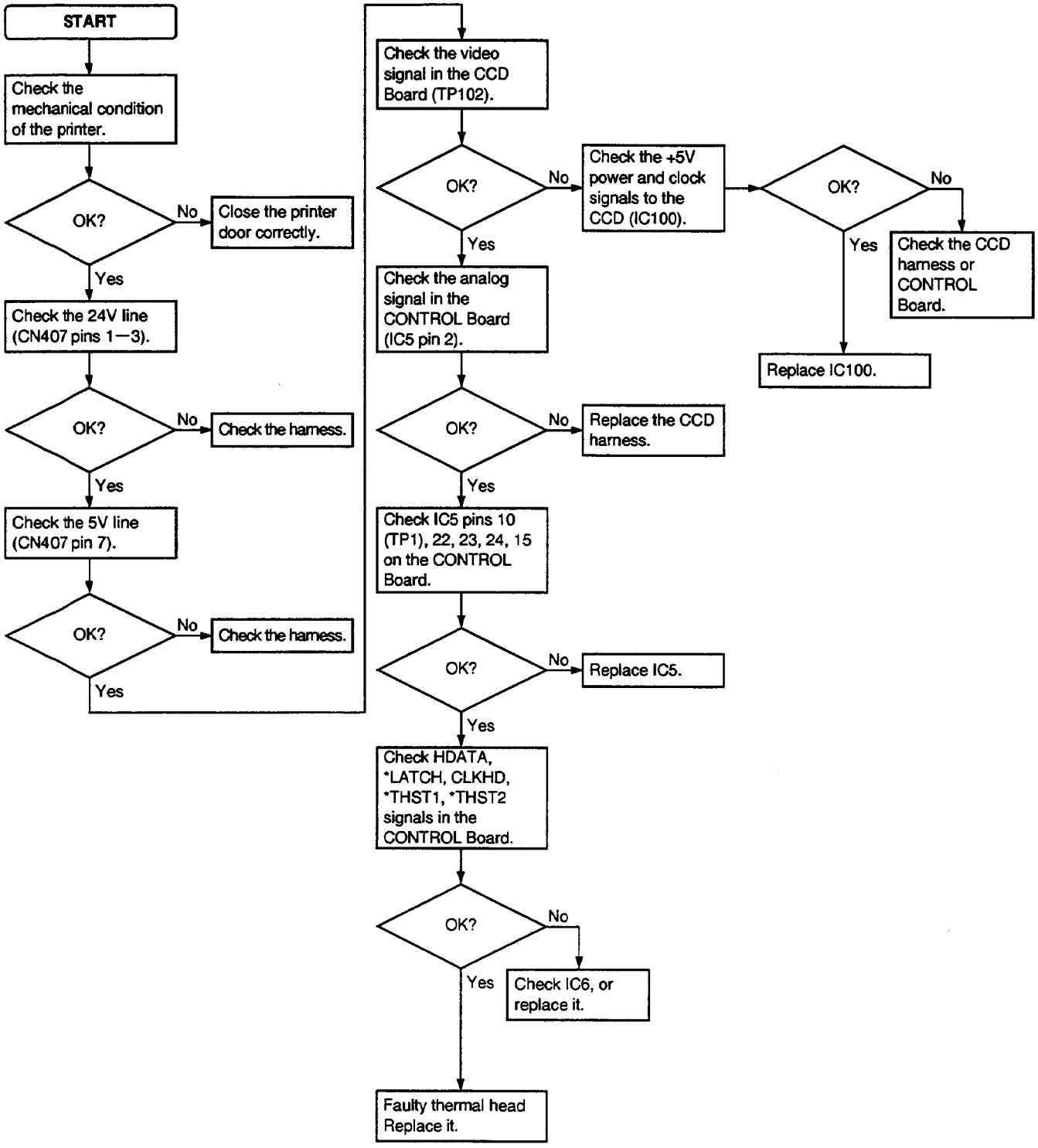
- Dirty surface of the mirror
- Faulty optical adjustment

(I) Black band

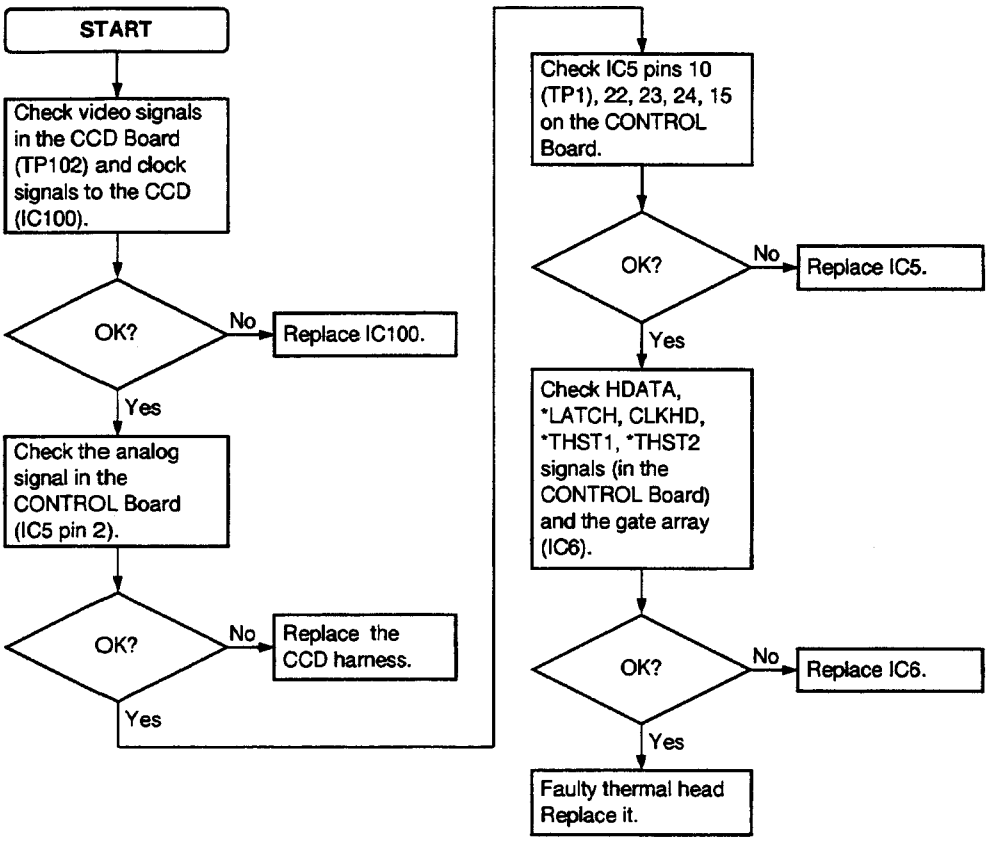
- Faulty optical adjustment
- Faulty thermal head

* If "Copy" key is pushed and dark printing or black band appears, keep the state of memories (do not operate the control panel carelessly). While pushing "Multi-Copy/Stop" key, push "Copy" key to be able to print out the shading waveform at time of previous copying. [If "Copy" key is pushed separately, the shading data on EEPROM (CONTROL Board IC3) is rewritten.]

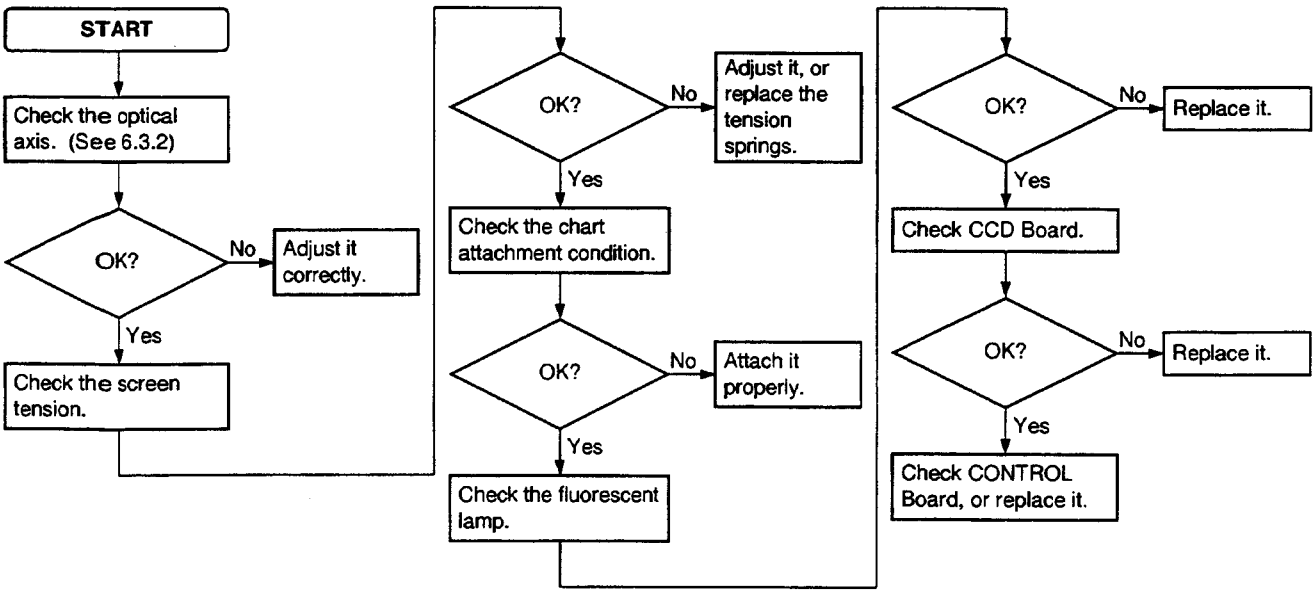
(A) Not printing



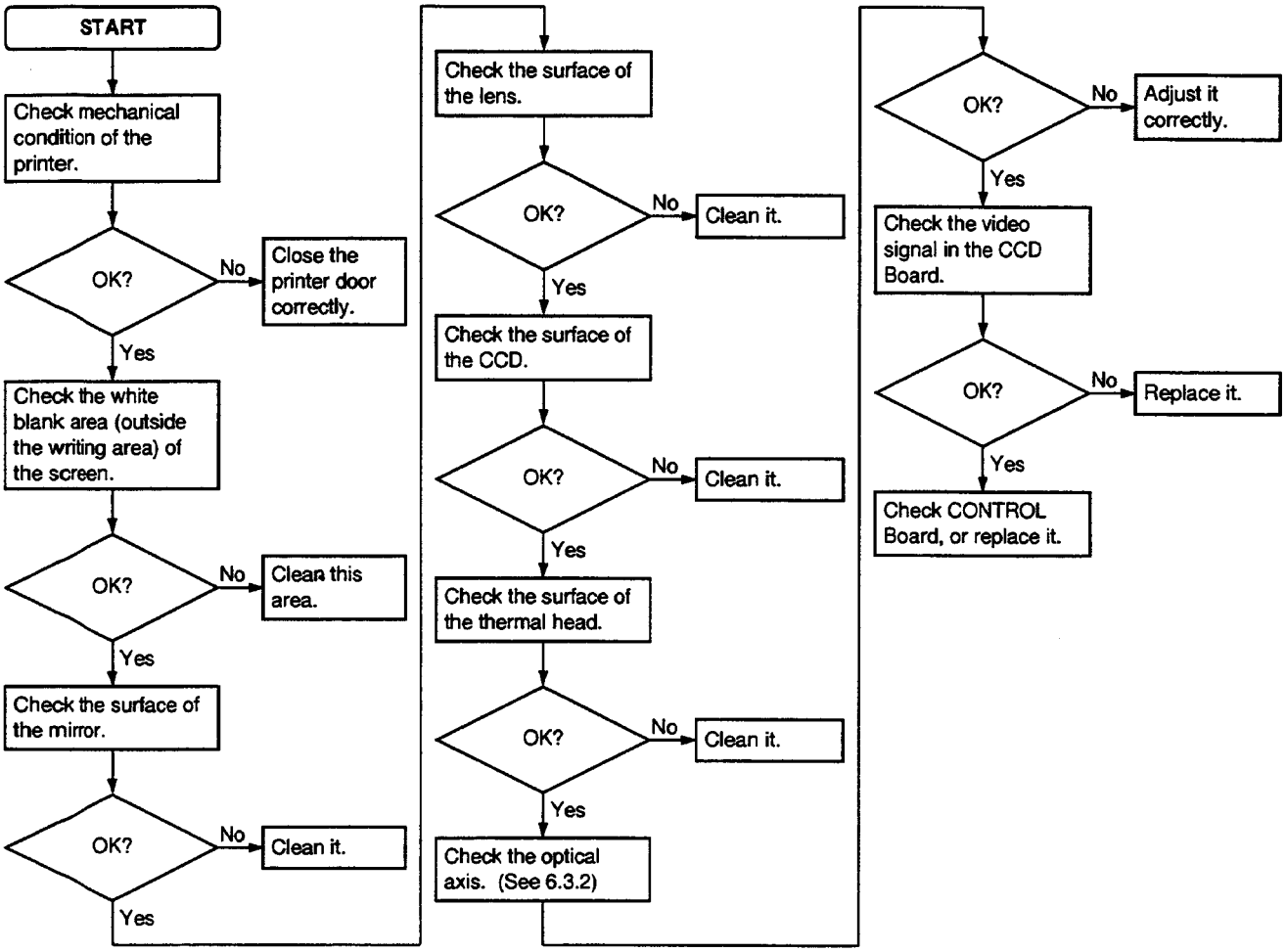
(B) All black



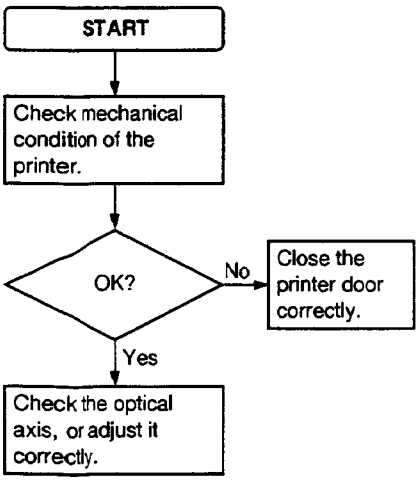
(C) Dark printing



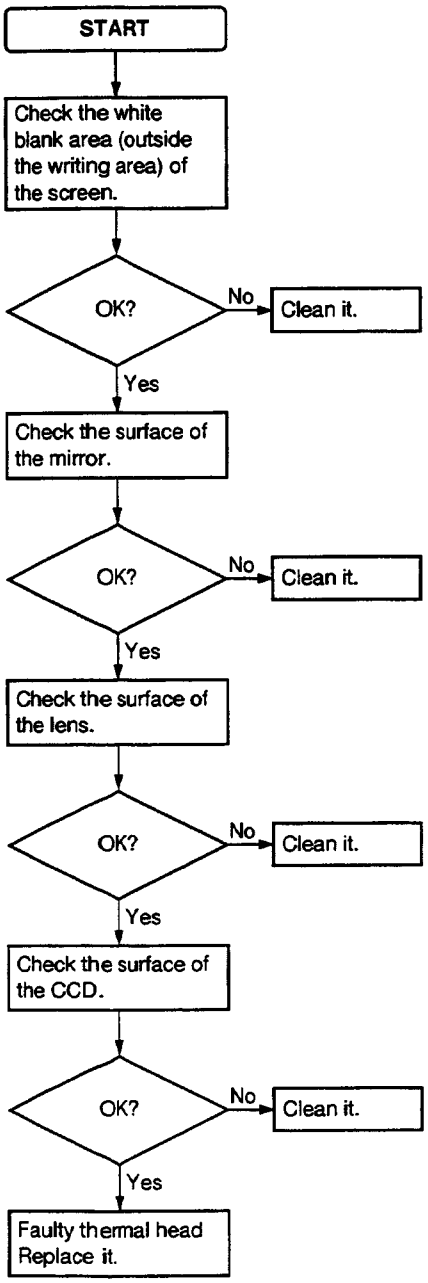
(D) Faint printing



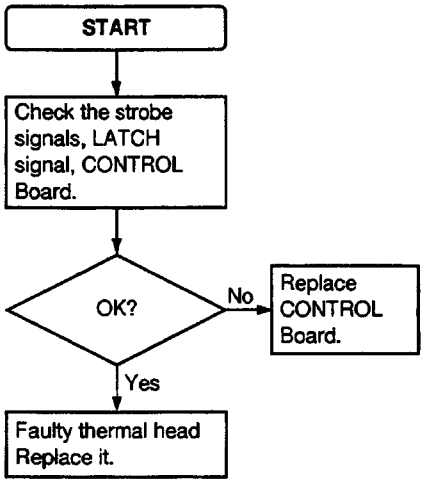
(E) Density difference between right and left



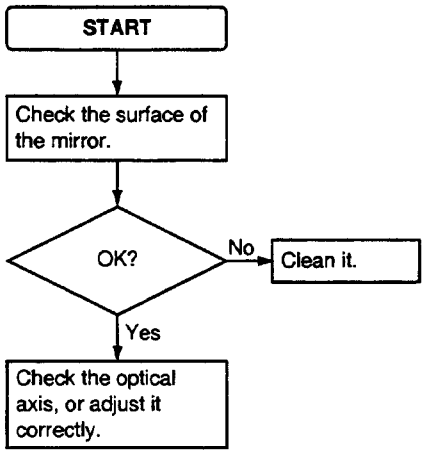
(F) White line



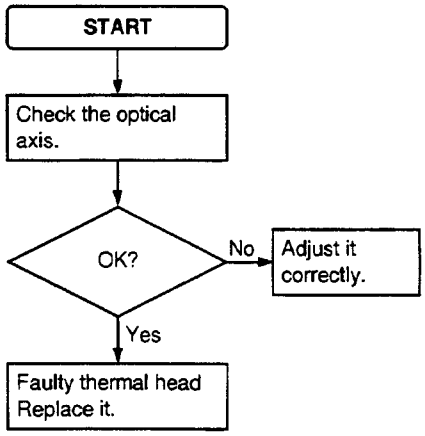
(G) White band



(H) Black line



(I) Black band



SECTION 8
CIRCUIT DESCRIPTION

8.1 General Block Diagram and Flowchart

8.1.1 General Block Diagram

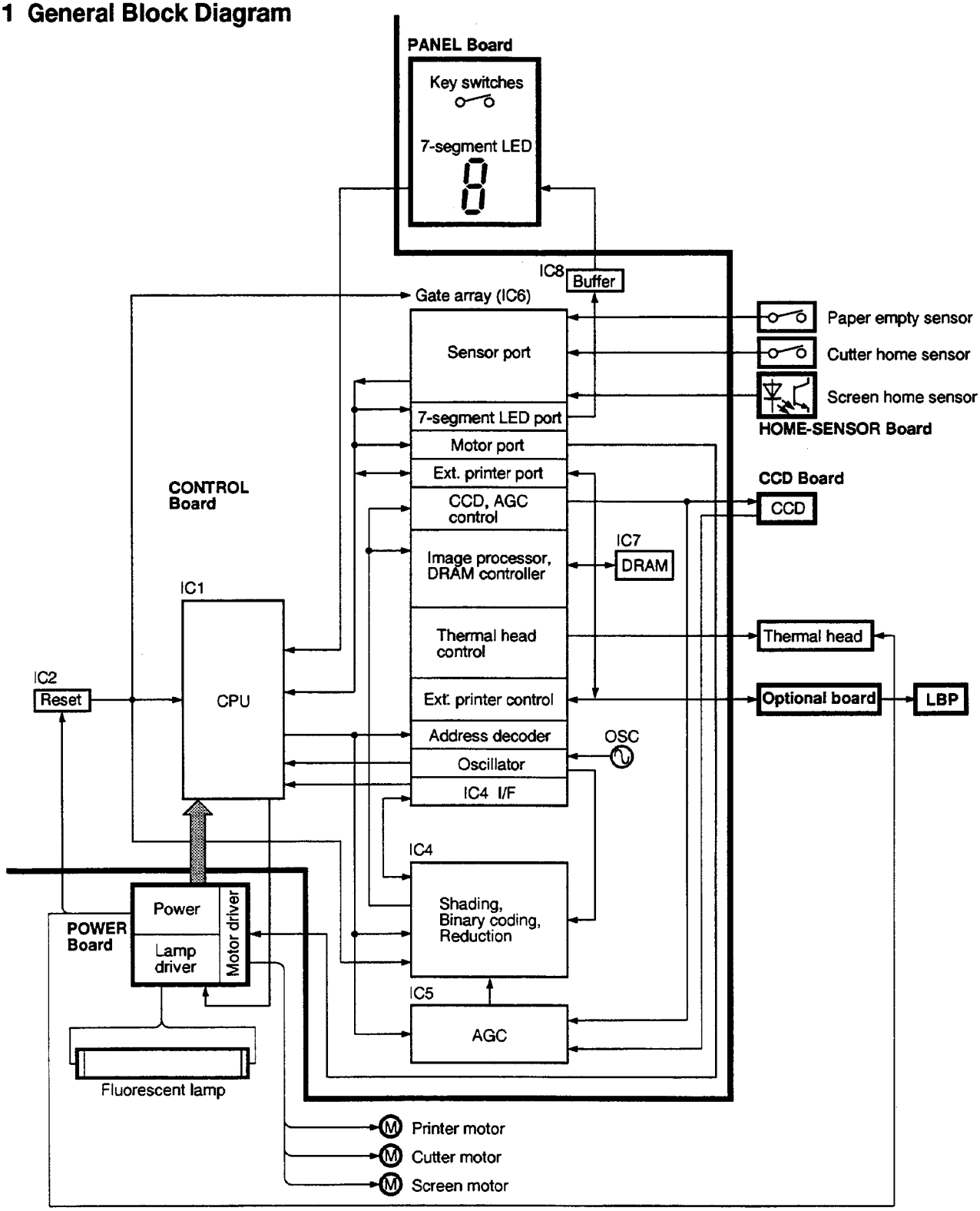
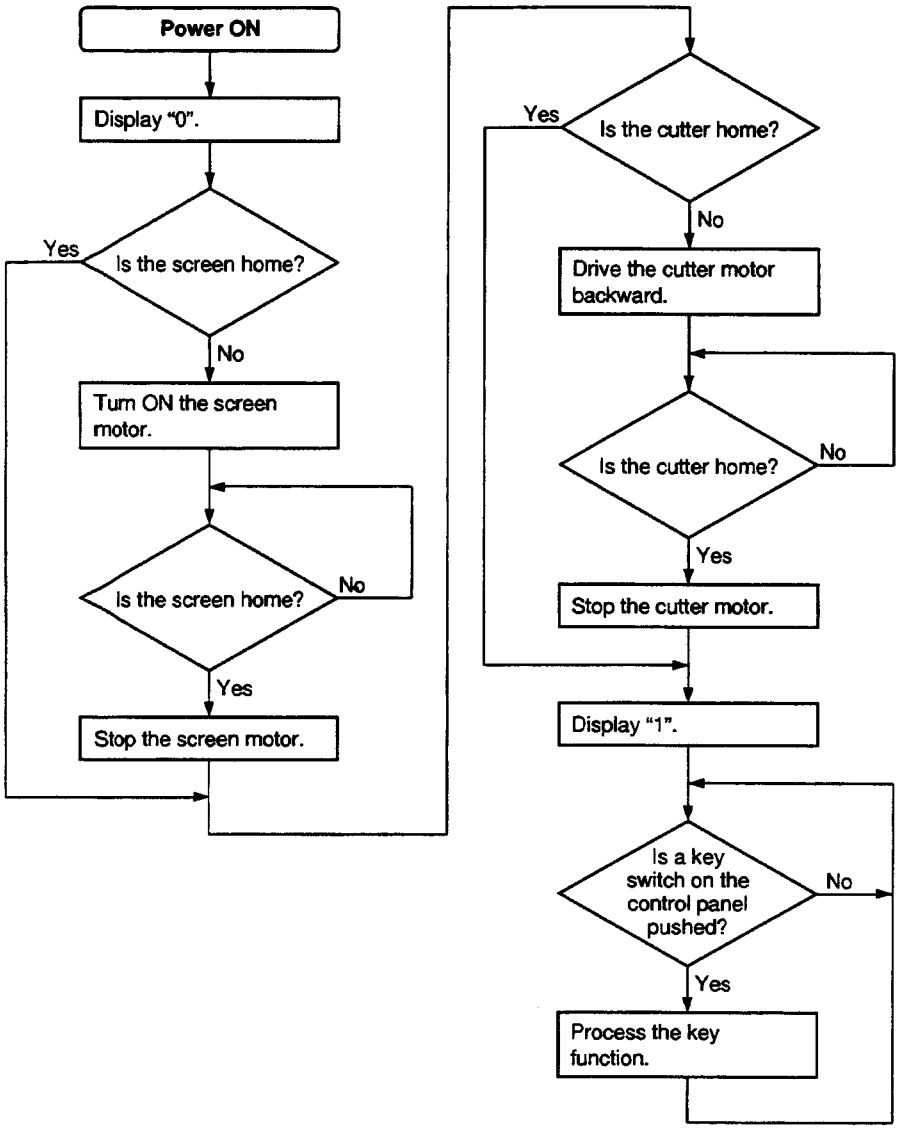
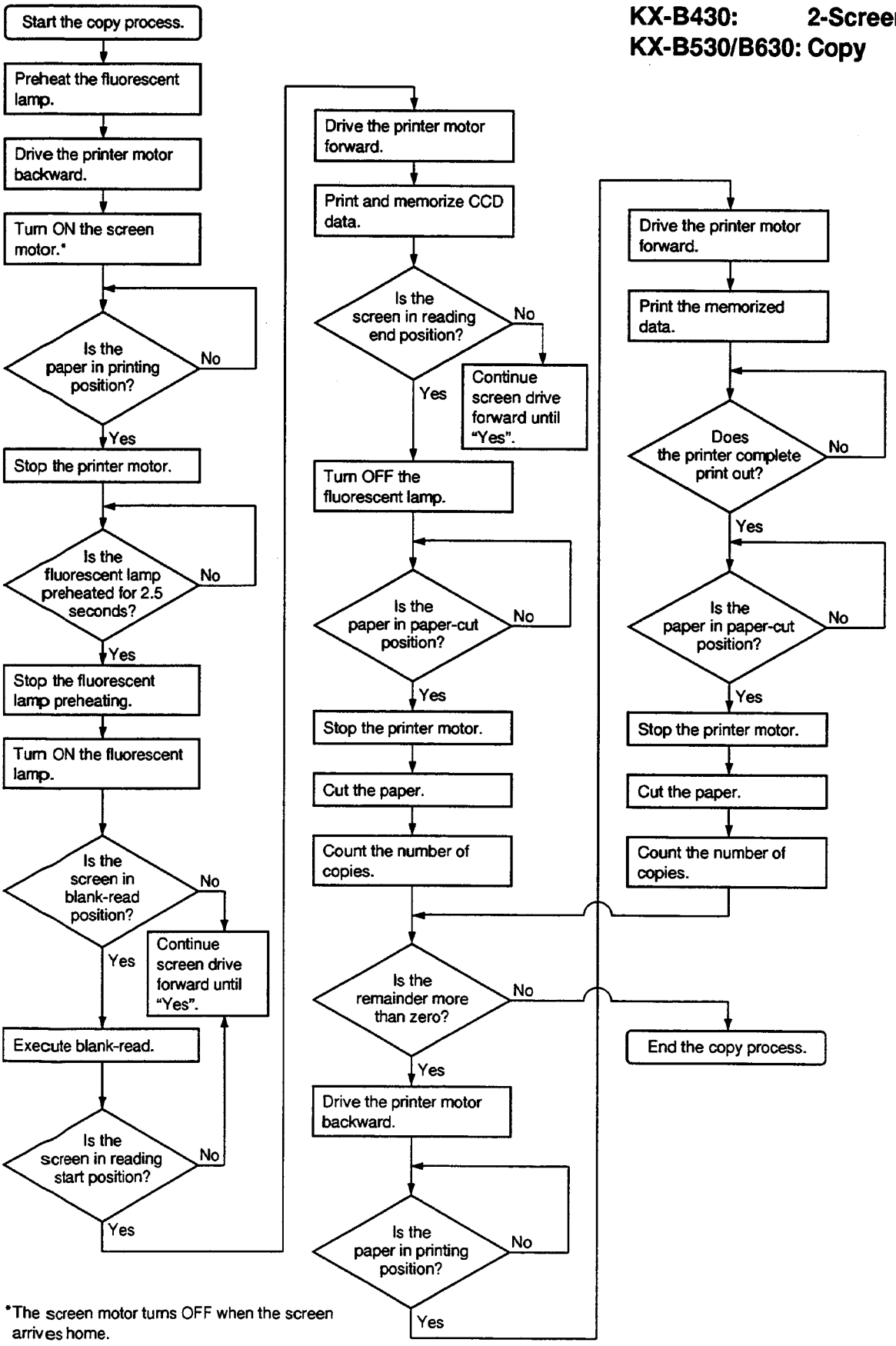


Fig. 8-1

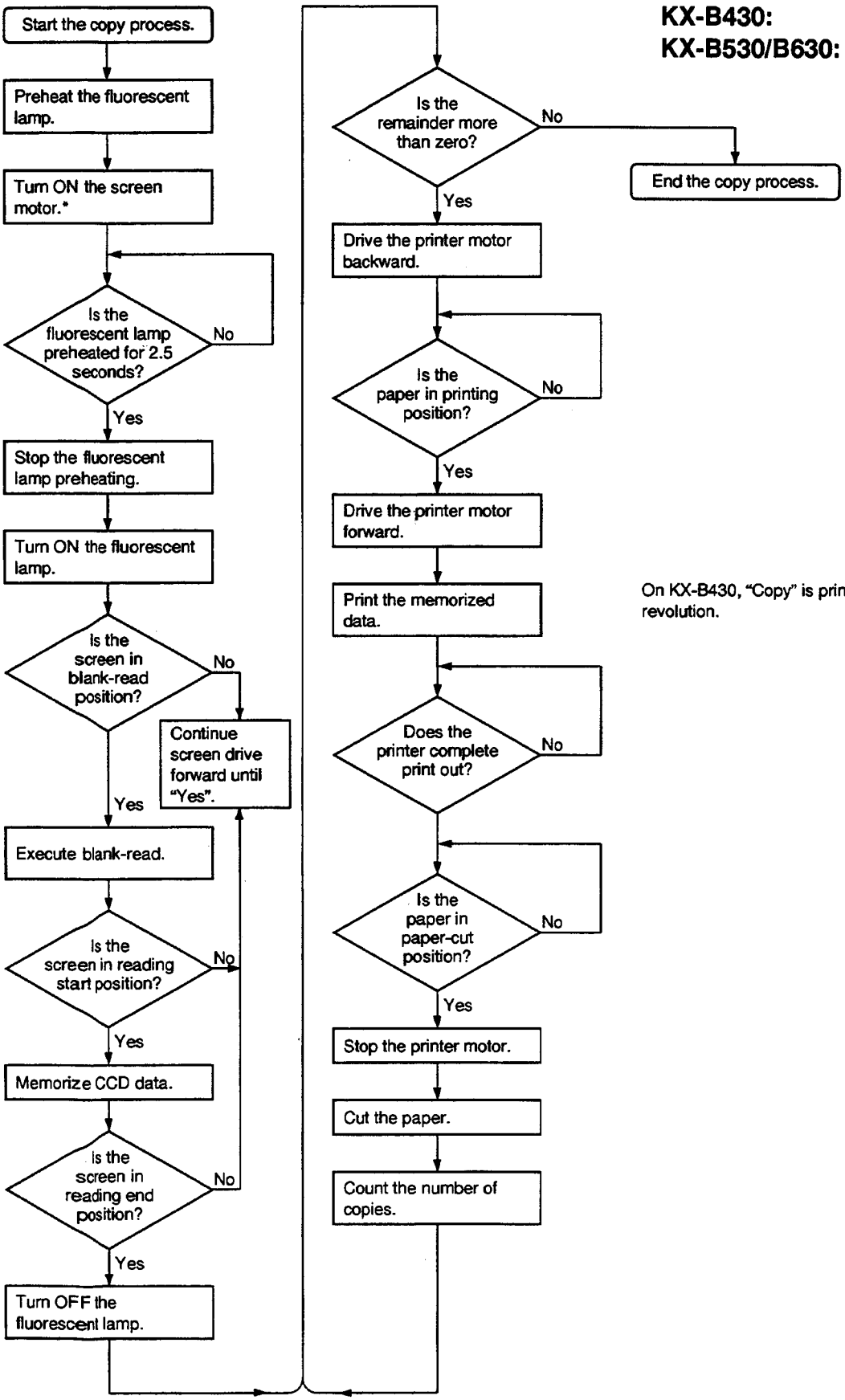
8.1.2 Flowchart



KX-B430: 2-Screen Copy
KX-B530/B630: Copy



*The screen motor turns OFF when the screen arrives home.



KX-B430: Copy
KX-B530/B630: 2-Screen Copy

On KX-B430, "Copy" is printed after 90° revolution.

*The screen motor turns OFF when the screen arrives home.

8.2 CONTROL Board

8.2.1 CPU (IC1)

An 8-bit CMOS microprocessor is used.

1) Specifications

- Minimum instruction execution time 800 ns (minimum)
- Memory ROM 8K bytes
  RAM 384 bytes
- Timer 8 bits ×4
- Interrupt signals 15 factors, 15 vectors
- I/O ports 58

2) Circuit Operation (Main Function of the CPU)

(1) Key input acceptance
(2) Preparation of lamp drive signals
(3) EEPROM interface
(4) Preparation of AGC signals
(5) Preparation of 7-segment LED display signals
(6) Enables the thermal head power (24 V) supply
(7) Interrupt signal acceptance

Terminal function of the CPU is as below:

Pin No.	Port Name	Signal Name	Function	Direction	Description
1	P62	PHEAT	Fluorescent lamp preheat	Out	This signal preheats the fluorescent lamp.
2	P61	LAMPON	Fluorescent lamp ON	Out	This signal turns ON the fluorescent lamp.
3	P60	T/HON	Thermal head ON	Out	Enables the thermal head power (24 V) supply.
4	P57	LEDDEN	Density LED drive	Out	HIGH: Lights the LED.
5	P56	GND	Not used	—	
6	P55	DENSITY	Density switching	In	Inputs HIGH when Contrast Key is pushed.
7	P54	D-COPY	2-screen copy	In	Inputs HIGH when 2-Screen Copy Key is pushed.
8	P53	CNTUP	Counting the number of copies	In	Inputs HIGH when Multi-Copy/Stop Key is pushed.
9	P52	COPY	Starting the copy process	In	Inputs HIGH when Copy Key is pushed.
10	P51	FEED	Advancing the screen	In	Inputs HIGH when Advance Key is pushed.
11	P50	+5V	Not used	—	
12	P47	EERMDO	EEPROM output data	Out	Serial output data to the EEPROM
13	P46	EERMDI	EEPROM input data	In	Serial input data from the EEPROM
14	P45	EERMSK	EEPROM clock	Out	Clock signal to the EEPROM
15	P44	EERMCS	EEPROM chip select	Out	Chip select signal of the EEPROM
16	INT1	CENACK	Centronics acknowledgment	In	Interrupt signal of the centronics acknowledgment
17	INT0	LININT	Line signal	In	1-line cycle interrupt signal
18	CNVSS	OPENB	Optional board connected	In	Inputs HIGH when the optional board is connected. Programs are read from the external ROM.
19	*RESET	*RESET	Reset signal input	In	Resets the CPU when signal is inputted.
20	P41	+5V	Not used	—	
21	P40	PRISEL	Printer selection	In	Comparison signal between CEND0–3 from IC6 and DIP switch setting on the optional board (Equal: HIGH)
22	XIN	CKL5	External clock	In	Reference clock (5 MHz)
23	XOUT	N.C.	Not used	—	
24	VSS	GND	Ground	—	Ground (0 V)
25	DB7	D7	External I/O data	I/O	Data I/O signal
26	DB6	D6	External I/O data	I/O	Data I/O signal
27	DB5	D5	External I/O data	I/O	Data I/O signal
28	DB4	D4	External I/O data	I/O	Data I/O signal
29	DB3	D3	External I/O data	I/O	Data I/O signal
30	DB2	D2	External I/O data	I/O	Data I/O signal
31	DB1	D1	External I/O data	I/O	Data I/O signal
32	DB0	D0	External I/O data	I/O	Data I/O signal

(Continued)

Pin No.	Port Name	Signal Name	Function	Direction	Description
33	AD15	A15	Address signal	Out	External address bus signal
34	AD14	A14	Address signal	Out	External address bus signal
35	AD13	A13	Address signal	Out	External address bus signal
36	AD12	A12	Address signal	Out	External address bus signal
37	AD11	A11	Address signal	Out	External address bus signal
38	AD10	A10	Address signal	Out	External address bus signal
39	AD9	A9	Address signal	Out	External address bus signal
40	AD8	A8	Address signal	Out	External address bus signal
41	AD7	A7	Address signal	Out	External address bus signal
42	AD6	A6	Address signal	Out	External address bus signal
43	AD5	A5	Address signal	Out	External address bus signal
44	AD4	A4	Address signal	Out	External address bus signal
45	AD3	A3	Address signal	Out	External address bus signal
46	AD2	A2	Address signal	Out	External address bus signal
47	AD1	A1	Address signal	Out	External address bus signal
48	AD0	A0	Address signal	Out	External address bus signal
49	*RD	*RD	Read signal	Out	External memory read signal
50	*WR	*WR	Write signal	Out	External memory write signal
51	SYNC	N.C.	Not used	—	
52	ϕ	N.C.	Not used	—	
53	RSETO	N.C.	Not used	—	
54	*ONW	*ONW	1-wait signal	—	LOW: 1-waits the read/write action.
55	P31	+5V	Not used	—	
56	P30	+5V	Not used	—	
57	VCC	+5V	Power	—	Power (5 V)
58	P71	+5V	Not used	—	
59	P70	+5V	Not used	—	
60	P67	*STOP	AGC stop	Out	Inhibits the gain switching. LOW: Inhibit
61	P66	*AGCCK	AGC clock	Out	Gain input signal
62	P65	AGCLD	AGC load	Out	Resets the gain control circuit. HIGH: Reset (max. gain)
63	P64	SIUD	Input signal selection	Out	Switches serial data input and up/down signal.
64	P63	SUDS	Gain control selection	Out	LOW: Gain is controlled by serial data or up/down signal.

8.2.2 Reset IC (IC2)

1) Function

When the power is turned ON, or when the power is momentarily interrupted, reset pulses are generated to reset the CPU (IC1), Shading IC (IC4) and Gate Array (IC6).

2) Circuit Operation

When the power is turned ON and the power source Vcc increases to exceed +4.25 V, Reset IC (IC2) is activated, LOW signal is sent for about 34 ms and HIGH is sent to reset the CPU (pin 19).
When the power is momentarily interrupted and power source goes below +4.25 V, LOW signal is sent to stop the CPU.
When the power is resumed and power source increases to exceed +4.25 V, LOW signal is sent for about 34 ms and HIGH is sent to reset the CPU again.

Circuit diagram is as follows:

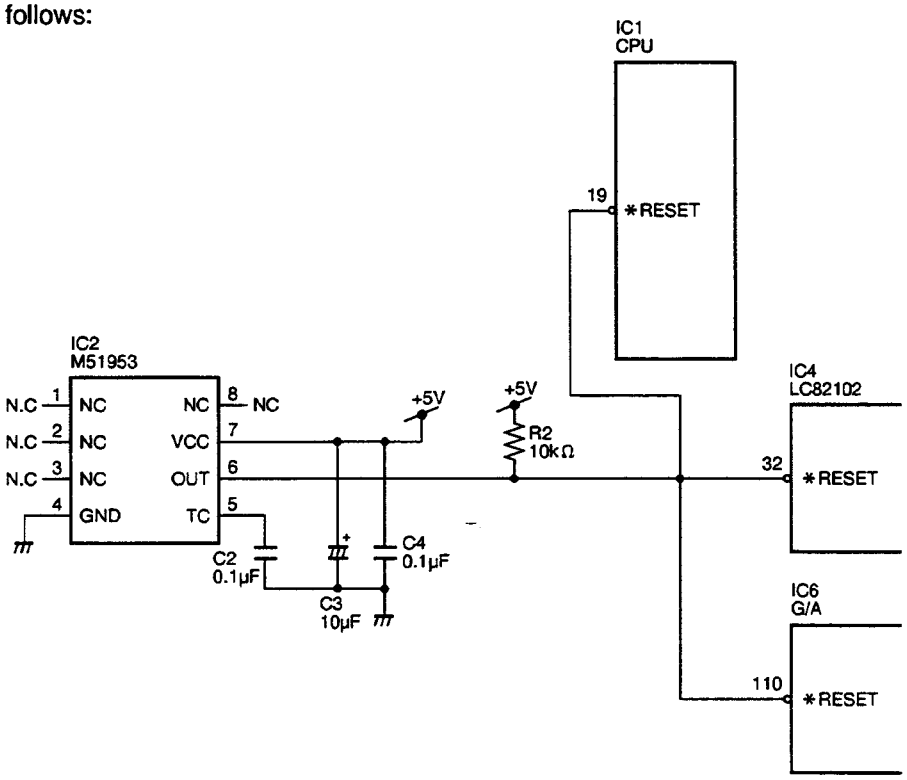


Fig. 8-2

Timing chart is as follows:

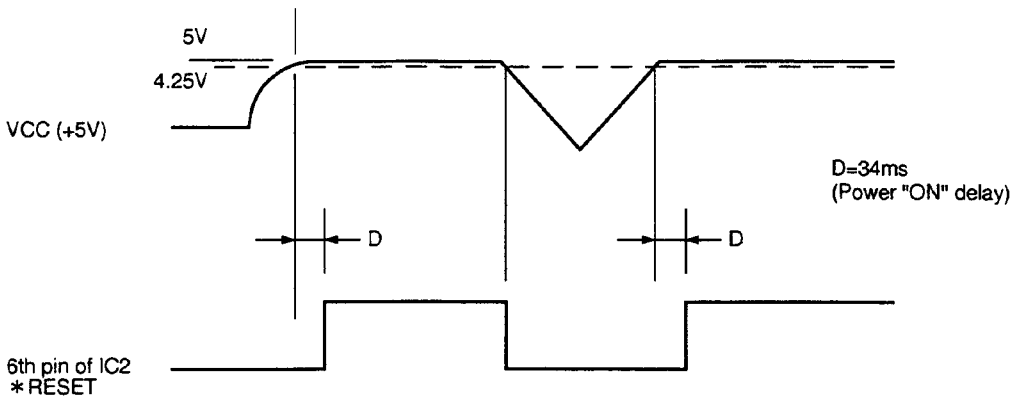


Fig. 8-3

8.2.3 Shading IC (IC4)

1) Outline

This IC converts the analog image signal of CCD into binary image data. A built-in 6-bit D/A converter generates operative reference electric potentials into an 8-bit A/D converter. After correcting distortion on the average of 8 pixels, IC4 executes gamma conversion, and produces multiple-value data. Reduction processing for the main scanning direction is executed after 2-dimension filter processing of such data and conversion into binary form.

2) Block Diagram

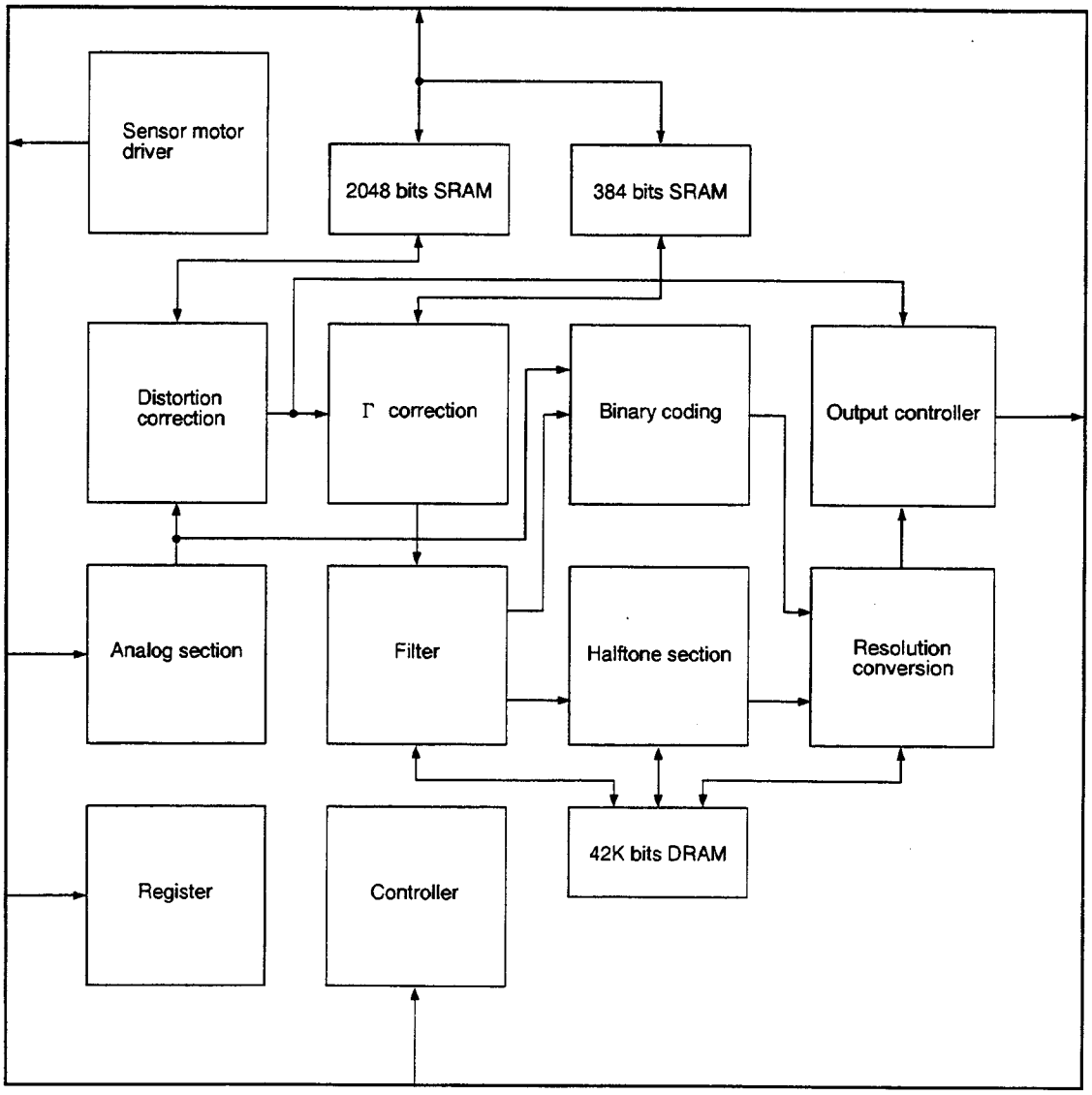


Fig. 8-4

3) Terminal Functions

(1) CPU interface section

A8–A0 (Input):	Address input to IC4
D7–D0 (I/O):	Data bus between IC4 and the CPU (IC1) or between IC4 and the gate array (IC6)
*IOE (Input):	I/O Enable signal } To be used when accessing to the internal register, etc.
*IOCS (Input):	I/O Chip Selection signal }
*ME (Input):	Memory Enable signal } To be used when accessing to the shading and gamma memories
*MCS (Input):	Memory Chip Selection signal }
LININT (Output):	Informs Line switching timing to the CPU.
*WR (Input):	Write signal
*RD (Input):	Read signal

(2) System clock

CLKIN (Input):	Used to input system clock of IC4 (10 MHz clock is inputted from IC6.)

(3) Analog section

AIN (Input):	This is an analog input for the built-in 8-bit A/D converter. Here, the image signal is inputted. As for the analog input signal, black data is inputted as minimum electrical potential.
TEMP (Input):	This is an analog input for the built-in 8-bit A/D converter. The signal from a thermosensor of the thermal head is inputted here. As this IC has only one built-in 8-bit A/D converter, it is used by switching between AIN and TEMP.
ATAP (Output):	This is high reference for the built-in 8-bit A/D converter. Electric potential changes in accordance with the built-in D/A converter.
ADREFL (Input):	This is low reference for the built-in 8-bit A/D converter. Approx. 1.8 V is inputted.
DAREFL (Input):	This is low reference for the built-in 6-bit D/A converter. Approx. 1.8 V is inputted.
DAREFH (Input):	This is high reference for the built-in 6-bit D/A converter. 5 V is inputted.
AP0–AP3 (Output):	General purpose ports for analog signal. Not used
PP0–PP7 (I/O):	General purpose ports for I/O. Not used

(4) Binary image data output

SDE (Output):	Serial output effective period signal for binary image data. HIGH is outputted during effective period.
SDCK (Output):	Serial transfer clock terminal for binary image data. While synchronizing with the fall of SDCK, the data is outputted.
SD (Output):	Serial output terminal for binary image data. HIGH is black data.

(5) Sensor driving signal

SH (Output):	Line signal provided in the CCD
CLK1 (Output):	Transfer signal provided in the CCD. SH and CLK1 are inputted into IC6, arranged there, and driving pulses actually provided in the CCD are used.
CLK2 and RS:	Not used

4) Explanation of Functions (Supplementary)

(1) Memory

This IC has built-in distortion correction data and gamma correction memories. White standard data input into AIN is entered into the distortion correction data memory on the average of 8 pixels. (Black standard data is set at 0.)
As for correction of distortion, white correction is limited to 75% on the average of 8 pixels. Correction formula is:

$\{(I-B)/(W-B)\}\times 255$ where I = Input Data
B = Black Correction Data
W = White Correction Data (on the average of 8 pixels)

For gamma correction, address in the gamma correction memory is equivalent to data before gamma correction, and value desired to be corrected is written in data of its address in the gamma correction memory.
In gamma correction, table conversion is executed by using 6-bit, 64-word memory. Thus, address in the gamma correction memory is before gamma correction, and value to be corrected is written in data of its address.

(2) Analog section

Low reference voltage for 8-bit A/D converter is inputted from the external through ADREFL terminal. It is set at 1.8 V. High reference voltage is supplied from 6-bit D/A converter through operational amplifier. This high reference voltage can be monitored through ATAP terminal. Digital data of the 6-bit D/A converter is controlled by the register. There are two registers for AIN and TEMP. The analog signals from AIN terminal for image signal input and TEMP terminal for measurement of temperature are multiplexed when they are inputted into 8-bit A/D converter. Switching of input signals is executed in accordance with the following signal timings.

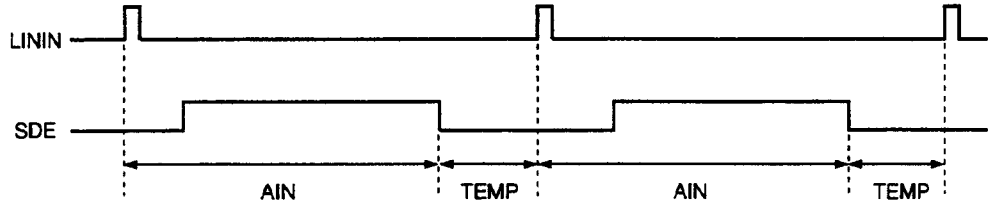


Fig. 8-5

The TEMP terminal is unused as to the initial version. It is used in accordance with higher version of CPU.

(3) Detection of peak value

Peak value of conversion data of the 8-bit A/D converter during shading effective period must be detected.

5) Explanation of Operation

When actually executing copy operation, peak value at the reading position of white standard must be monitored first. Adjust gain of IC5 so that peak value may be at F8h–FDh level. In case the peak value does not rise to that level even though gain of IC5 would be maximized under copy operation at low temperature and small quantity of lamp's light, lower high reference voltage from 3.9 V (default), and set data in the D/A converter so that peak value may be at F8hñFDh level.

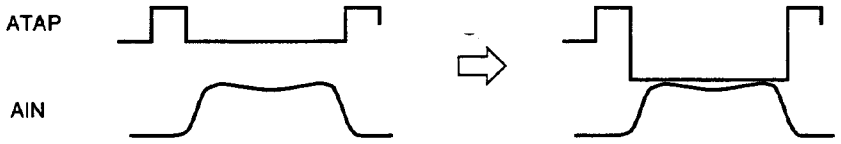


Fig. 8-6

Next, in order to carry out shading, enter data for the reading position of white standard into the shading memory on the average of 8 pixels.

In actuality, when image data is read, data is processed in accordance with the following formula:

$x = (I/W) \times 255$ where I = Input Data

W = White Correction Data (on the average of 8 pixels)

After passing through processing systems of gamma curve conversion table and filter, "x" is compared with the threshold value, processed to binary data, and delivered to IC6 after reduction processing.

8.2.4 AGC (IC5)

This IC takes samples from only the signal constituent portions of CCD's output signals through the sample-hold circuit, and executes amplitude adjustment of that signal through the gain control circuit. Then, it generates the signal on the basis of the black level of CCD sensor through the black level clamp circuit. Such signal processing reduces unevenness of CCD sensor, fluorescent lamp's intensity of light, changes with the passage of time, or other over-tolerance.

Circuit Operation

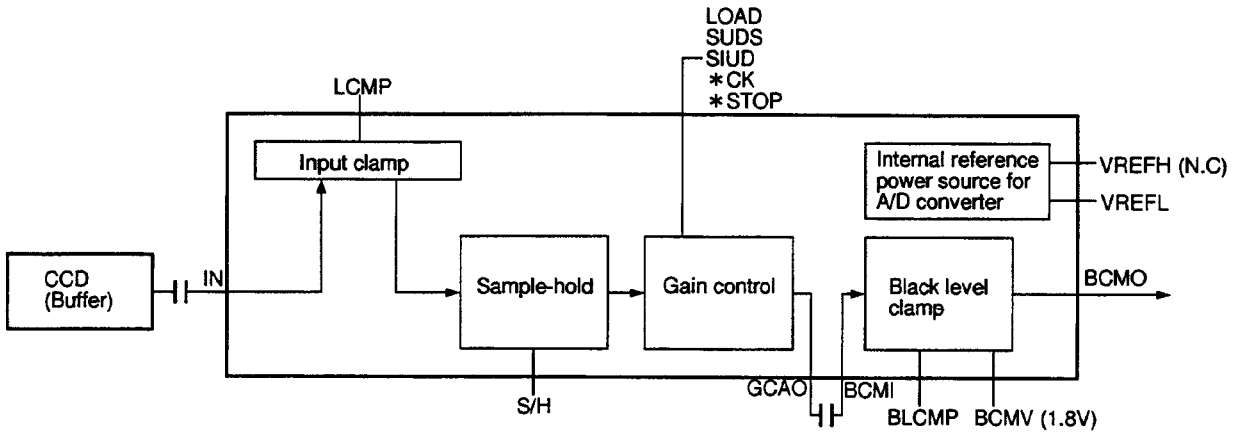


Fig. 8-7

Analog signals from the CCD are combined by means of capacitive coupling, and they are inputted to IN terminal (pin 2).

- Input Clamping Circuit

  When LCMP (pin 24) is at HIGH, IN (pin 2) is clamped with the internal standard power source (2.2 V). It opens when it is at LOW.

- Sample-hold Circuit

  Sample-hold clock is inputted to S/H (pin 22). When the sample-hold clock is at HIGH, sampling is carried out, and when at LOW, holding is carried out.

- Gain Control Circuit

  This gain control amplification circuit can adjust the range of gain in 256 steps from 4ñ20 times by controlling 5 input signals from SUDS (pin 16), SIUD (pin 17), COAD (pin 18), CK (pin 19) and STOP (pin 20) through CPU's port.

- Black Level Clamping Circuit

  This circuit executes clamping on basis (black) of output between shading pixel sections of CCD's output signals. It combines the output terminal GCAO (pin 7) for the gain control circuit with the input terminal BCMI (pin 8) for the black level clamping circuit signal by means of capacitive coupling. The circuit supplies 1.8 V to BCMV (pin 9) so that the output DC level between shading pixel sections of CCD's output signals can be 1.8 V, which is standard voltage of the A/D converter, and then it clamps by inputting black level clamp clock from BLCMP (pin 15) in time to shading pixel sections. When clamping is executed, voltage V_{BCMV} at BCMV (pin 9) terminal is equal to voltage V_{BCMO} at BCMO (pin 10) terminal.

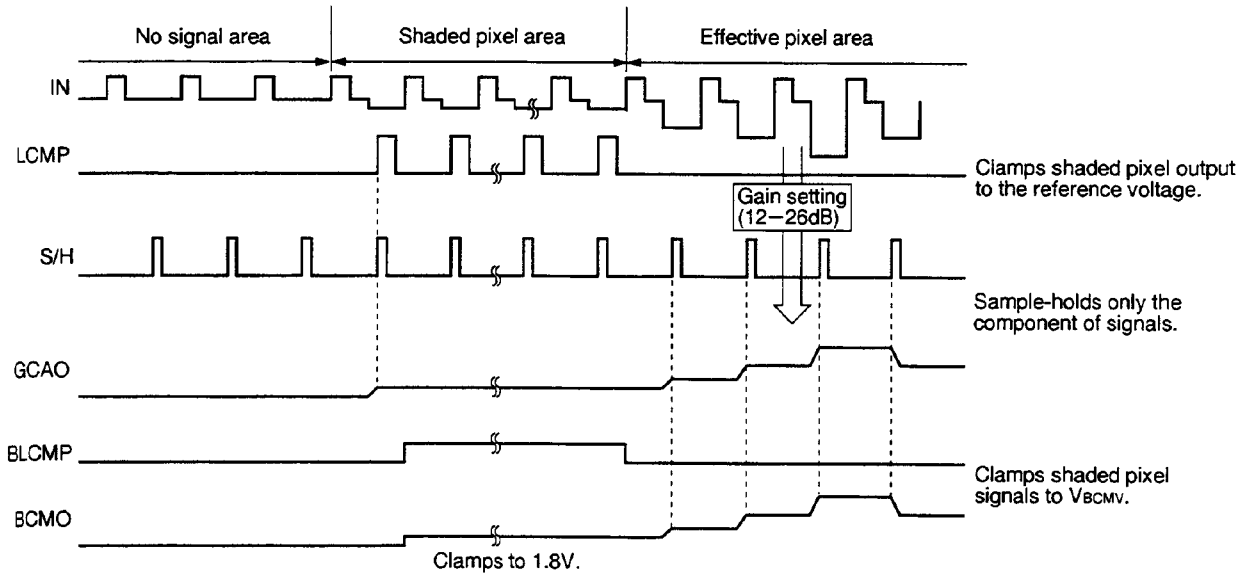


Fig. 8-8

8.2.5 Gate Array (IC6)

1) Function

This gate array is functionally divided into eight sections. Block diagram of the gate array is shown below:

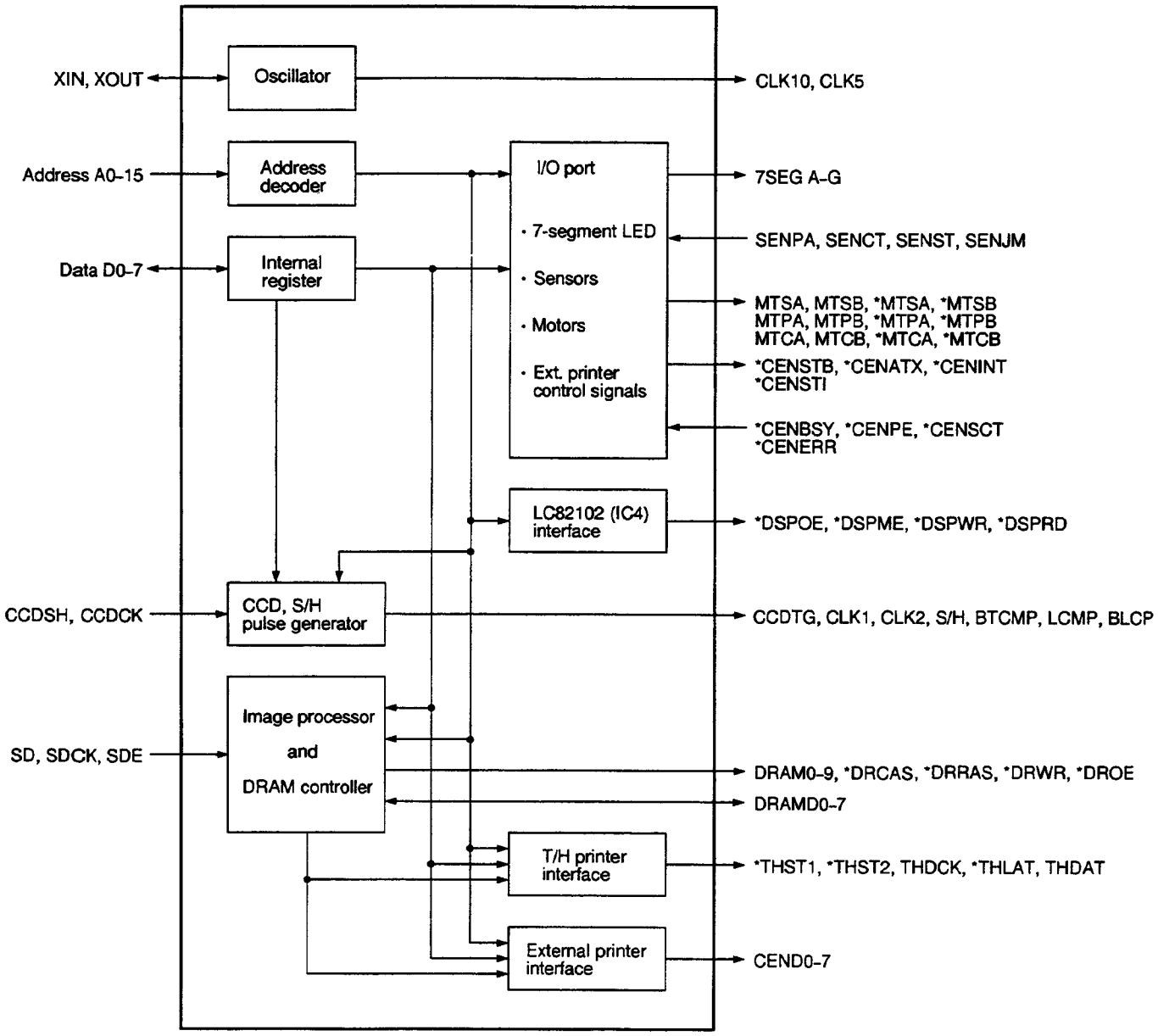
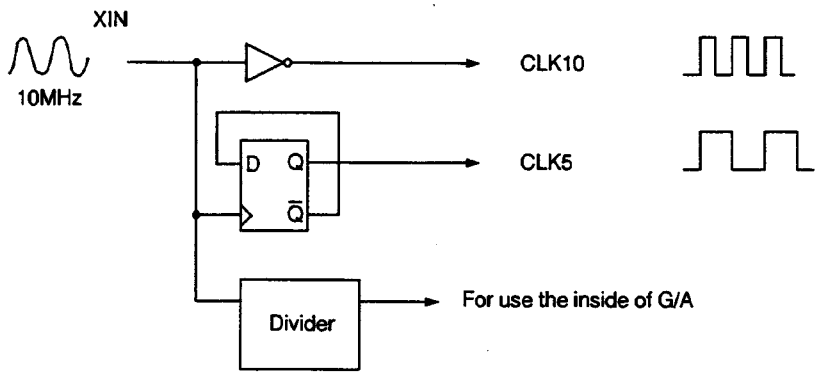


Fig. 8-9

2) Circuit Operation

(1) Oscillator section

10 MHz signal is inputted to this gate array by a ceramic oscillator. 5 MHz and 10 MHz clock pulses for CPU and IC4, and another pulse to be used internally are produced.



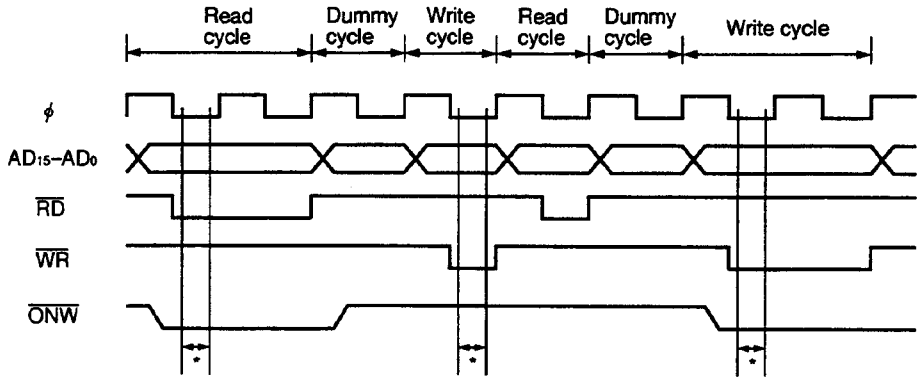
(Equivalent Circuit)

Fig. 8-10

(2) Address data section

This section decodes address signals of A0–A15 input from CPU and produces individual chip selection signals and 1-wait *ONW signal.

See the timing chart below (Fig. 8-11). Marked with asterisk (*) in the timing chart, *ONW signal is outputted when address is decoded. When this *ONW signal is inputted to CPU, the latter carries out 1-wait operation upon executing read/write against externals.



* Acceptable period of *ONW input signal

The *ONW signal must be steady at HIGH or LOW levels during this period. On other times *ONW input signal level does not affect performance.

Further, when the address is 0008h–043Fh, the *ONW signal cannot be accepted and bus cycle cannot be extended.

Fig. 8-11

(3) I/O ports

There are 4 I/O ports for the 7-segment LED (output), sensors (input), motors (output), and external printer control signals (I/O).

1. 7-segment LED output ports (pins 82, 83, 86–90)

Segments light when this port is at HIGH.

2. Sensors input ports (pins 73–76)

This consists of the paper empty sensor (pin 74), cutter home sensor (pin 76) and screen home sensor (pin 73). [Paper jam sensor (pin 75) is not used.]

- Paper Empty Sensor .... If the copy paper roll is empty (paper-end is detected) or the printer door is open, the sensor is set at LOW. This signal is polled by CPU.
- Cutter Home Sensor .... When the cutter is in home, the sensor is set at LOW. While the paper empty sensor is in HIGH, the CPU checks this sensor and judges whether the cutter operates normally.
- Screen Home Sensor ... When the screen is in home, the sensor is set at HIGH. Turning the power ON or under copy and feed operations (pushed Copy or Advance key), the CPU checks this sensor.

3. Motors output ports (pins 59–70)

These are output signals for group-switching of 3 stepper motors. The motors are for screen-feed, paper-feed and cutter-drive. For signal explanations, refer to "8.5.2 Motor Drive Circuit."

4. External printer control signals I/O ports (pins 100–104, 106–109)

These signals are used for printing through an external printer after attaching the interface (optional board).

(4) Interface of LC82102 (IC4)

When the CPU accesses LC82102 (IC4), the Read/Write signals and Enable signals are outputted through the gate array. When the CPU reads data from IC4, the data is latched by the gate array once, and then send it to the CPU.

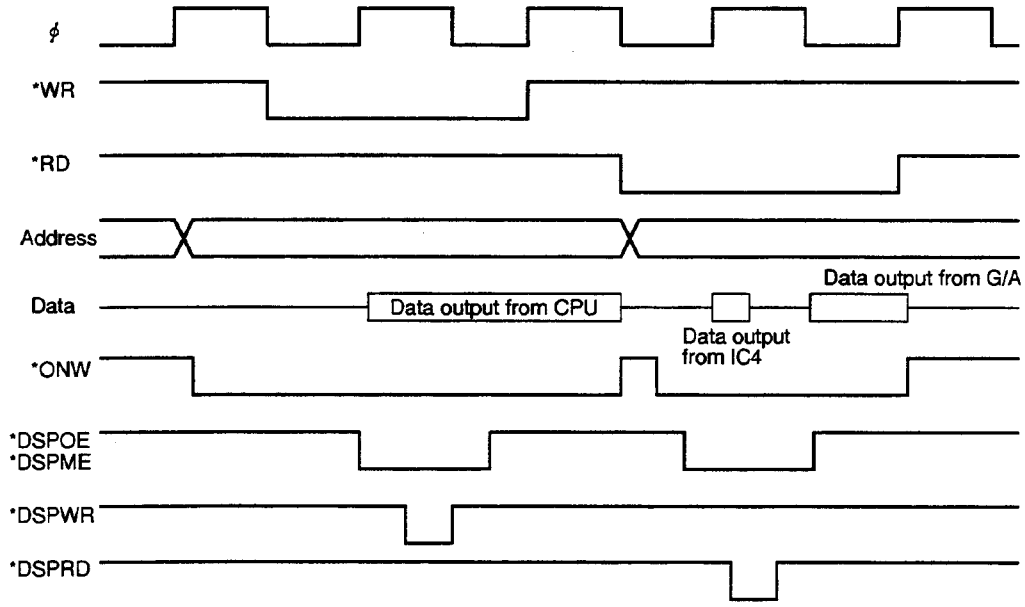
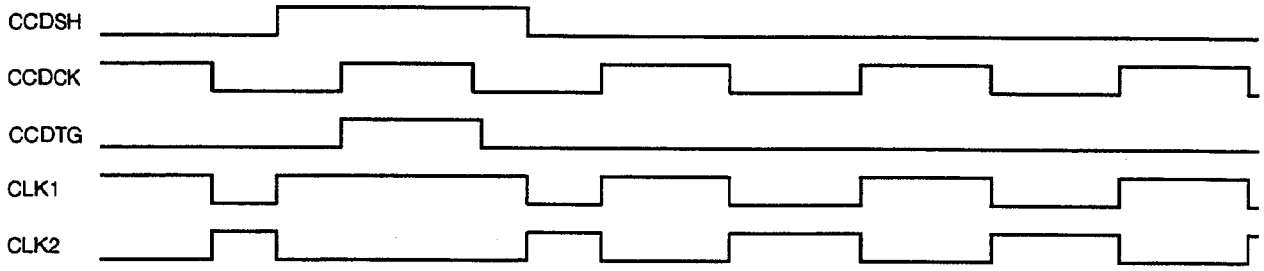


Fig. 8-12

(5) CCD driver and sample-hold circuits

This circuit receives the timing pulses of CCDSH and CCDCK from IC4, and generates driving pulse for the CCD, and sample-hold pulse, etc. for IC5.



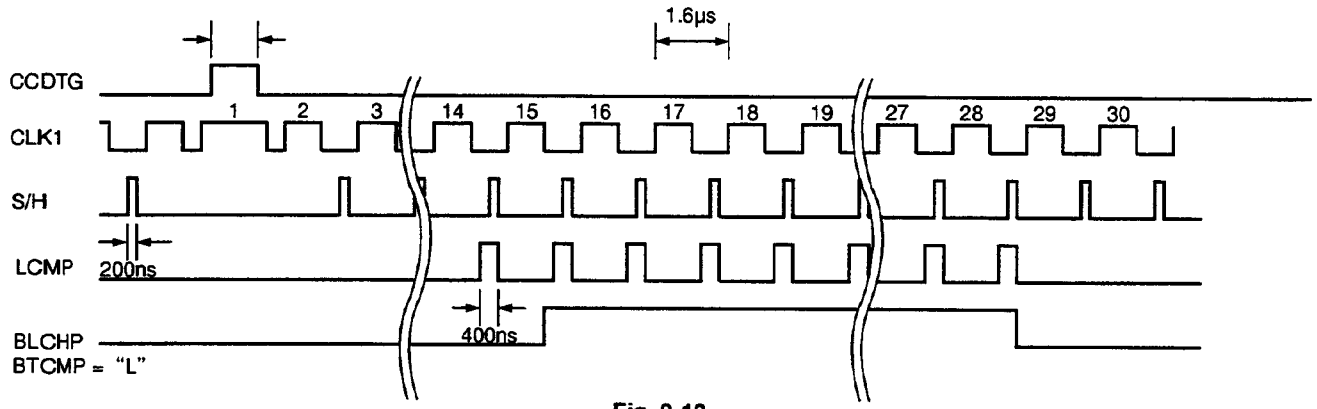


Fig. 8-13

(6) Image data processor and DRAM controller

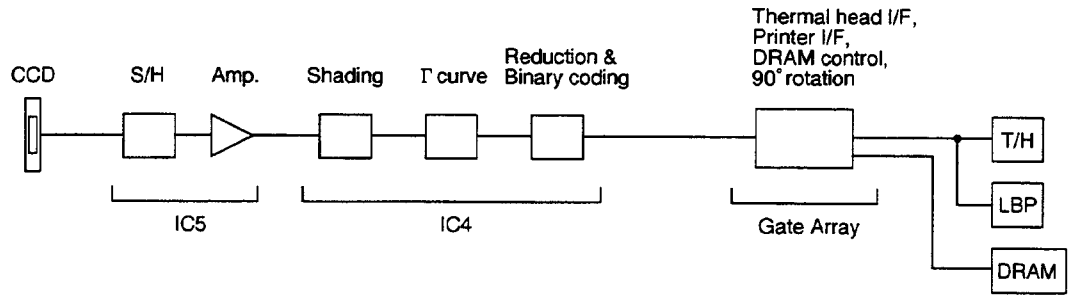


Fig. 8-14

The flow of image data processing of the electronic print board is illustrated above. While extracting only effective pixels among binary signals output from IC4 and processing for output to the thermal head, this IC sends image data to DRAM. When copying more than 2 sheets or outputting signals to normal paper external printer, this IC takes out data from the DRAM and sends it to either internal thermal printer or external printer.
Also, when 1-screen copy mode of KX-B430 series is set, this IC carries out 90° rotational processing of the image. (Remember that the KX-B430 prints in "Landscape".)
Read/Write image data to DRAM is executed in conformity with the timing of pixels clock SDCK. However, refresh cycle is repeated every 14 µs. This cycle takes precedence before Read/Write cycle when they coincide. Further, when image data processing is not executed, Read/Write from the CPU to DRAM through the gate array is possible. This function is used for test printing, etc.

(7) Thermal printer interface

The thermal printer sends data of HDATA (CN6–9) to the shift register with the trail timing of CLKHD (CN6–7) and latches data for one line in accordance with the pulse of *LATCH (CN6–8), and only by strobe impressing of *STB1–4, dot positions on black (= 1) among latched data starts the driver. Then electric current is applied to the heating element, radiation begins, and printing on the thermal paper starts.

Each timing is as shown in the diagram below:

(CLKHD is a pulse of 2.5 MHz. 625 kHz pulse is outputted when SDE is at Enable. But, the pulse is thinned out when non-effective element data is sent during SDE duration.)

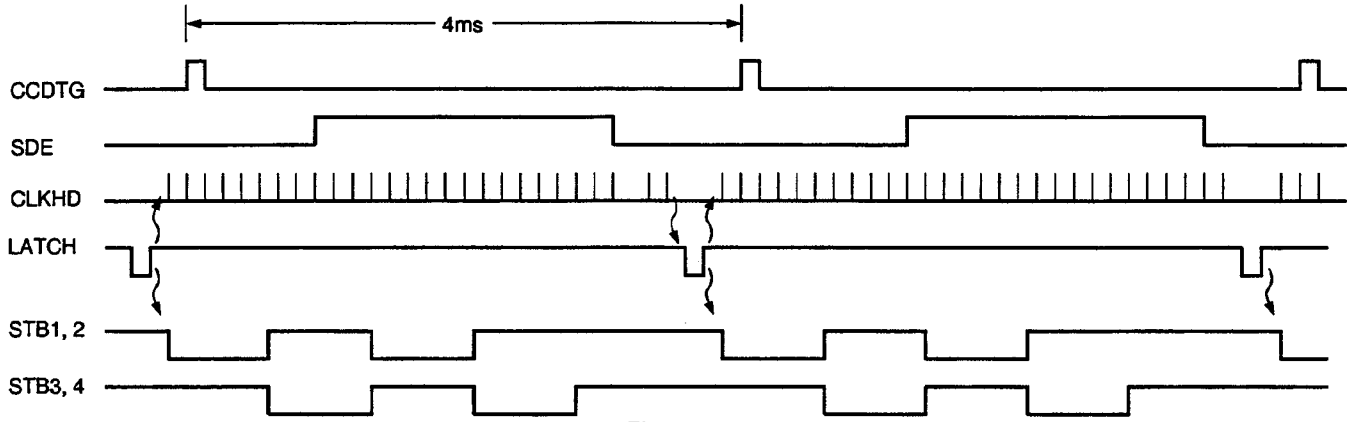


Fig. 8-15

(8) External printer interface

When printing through an external printer, the optional KX-B09 is used. This board takes out image data from DRAM and outputs it to CEND0–7, and then it sends data to the printer by using the external printer control signal [see p. 8–14, (3)-4]. In addition, when sending command data to the printer, it is possible to send data from the CPU through the gate array.

8.2.6 Paper Empty Sensor

A micro-switch is used.

When the paper is empty, the micro-switch is open and accordingly the signal SENPA becomes HIGH.

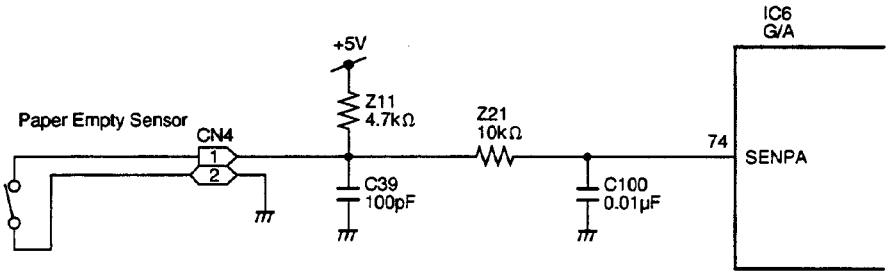


Fig. 8-16

8.2.7 Cutter Home Sensor

A micro-switch is used.

When the cutter arrives in home, the micro-switch is open and accordingly the signal SENCT becomes HIGH.

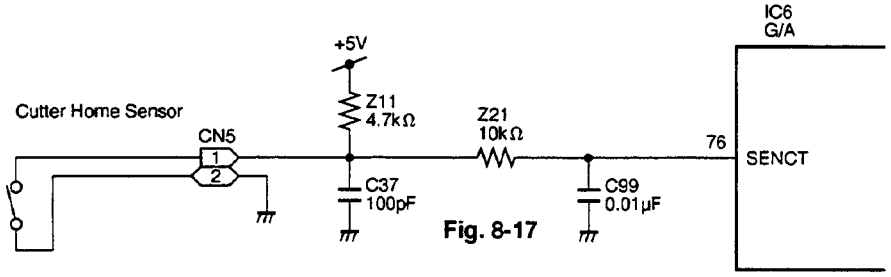


Fig. 8-17

8.3 CCD Board

8.3.1 Function

The fluorescent lamp illuminates the image on the screen, its image is reflected in a mirror, and inputs into the CCD. The output from the CCD is in proportion to the amount of light.

8.3.2 Circuit Operation

The CCD (Charge Coupled Device) is composed of a 2088 bits linear image sensor. It converts the optical data to electrical data. The driving of CCD needs three kinds of clocks which are CCDTG, CLK1, CLK2.
Clock is inputted from the CONTROL Board to the CCD Board through CN9.

1) CCDTG: Transferring Gate Clock Signal

This clock signal transfers the charge in light conversion section to the shift register.
One period of transferring gate clock equals the charging time of the CCD.

2) CLK1, CLK2: Shift Register Clock

This clock signal shifts the transferred data in the shift register. The shifted data output as Vout.

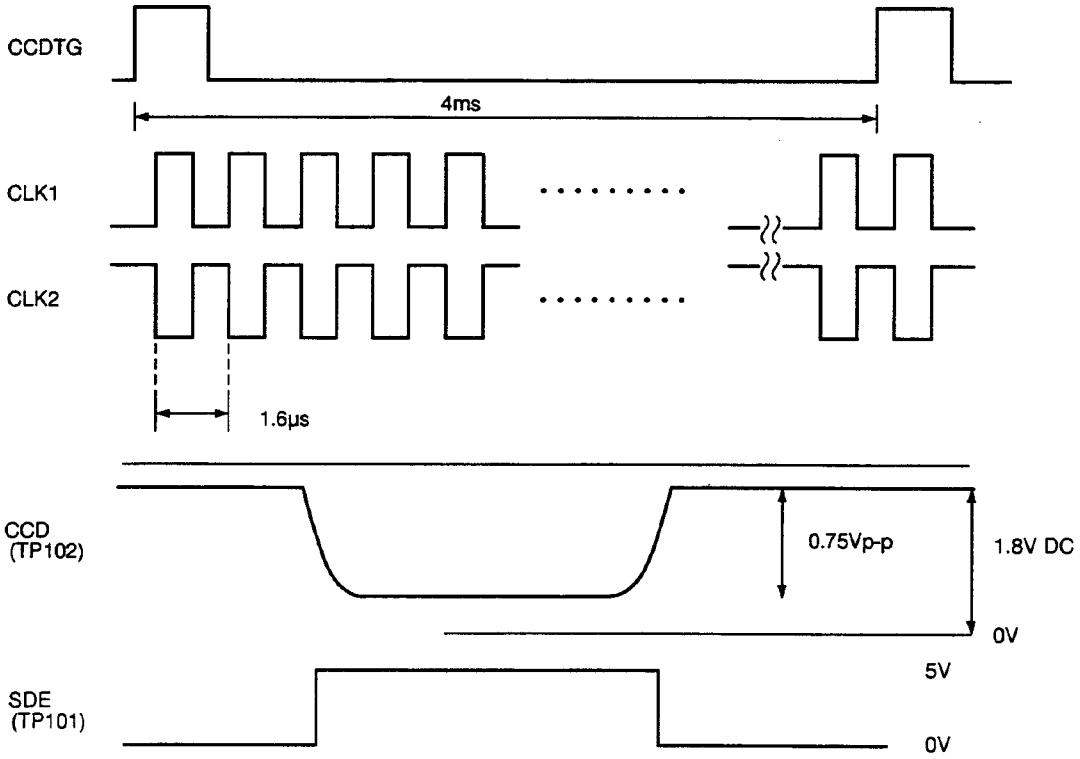


Fig. 8-18

The CCDIG pulse (1 line pulse) and the CLK1 and CLK2 pulse (clock pulse) is inputted to the IC100 CCD Sensor from the gate array (IC6) on the CONTROL Board. The CCD signal is then sent from the Vout, and then outputted through transistor Q100.
The SDE signal indicates the range read by the CCD.

8.4 Screen Home Sensor Circuit

This circuit is made up of a reflective type optical sensor and the buffer circuit.
There are two black patches at the bottom of the screen which do not reflect light. When the sensor detects a black patch, the output signal SENST becomes LOW and is applied into the gate array (IC6 pin 73).
When the home marker (black patch) is not in position, the optical sensor (IC300: ON2173R) receives the light being reflected by the screen, and the photo-transistor is ON. The base of transistor (Q300) is less than 0.6 V and it remains OFF.
When the home marker arrives, the light is not received, the photo-transistor goes OFF, and Q300 goes ON. Output SENST becomes LOW.

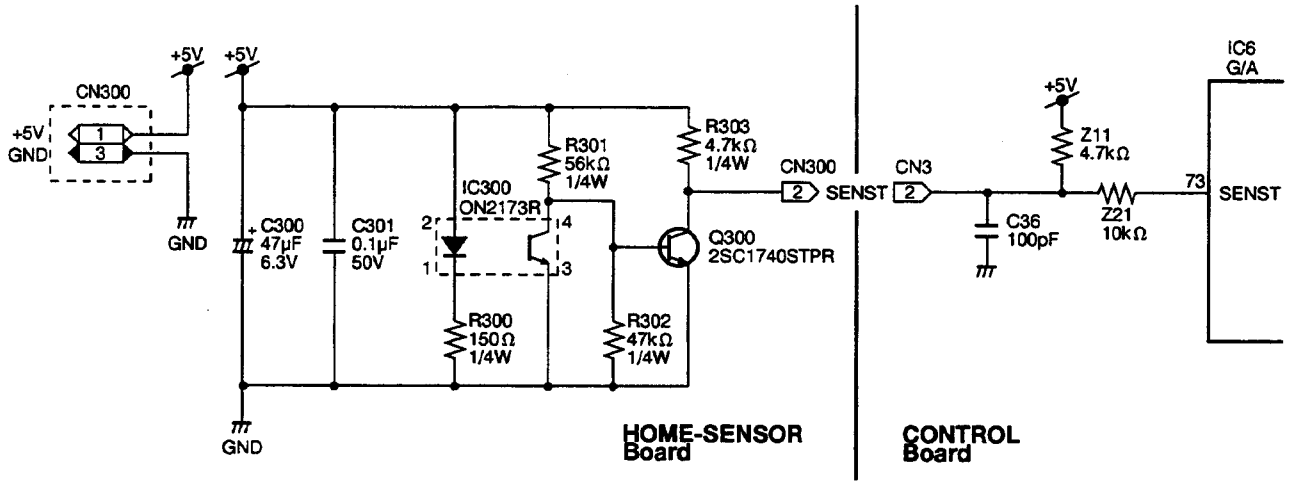


Fig. 8-19

8.5 POWER Board

8.5.1 Power Circuit

1) Input Filter Circuit

AC line voltage goes to the rectifying circuit through the line filter.
The line filter interrupts noise emissions to the AC line from the power supply unit and protects the power supply unit from spike voltage being introduced into the unit from the AC line.

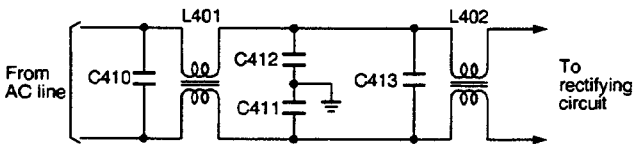


Fig. 8-20

2) Rectifying and Smoothing Circuit

AC input is rectified by D411, and smoothed by C414.

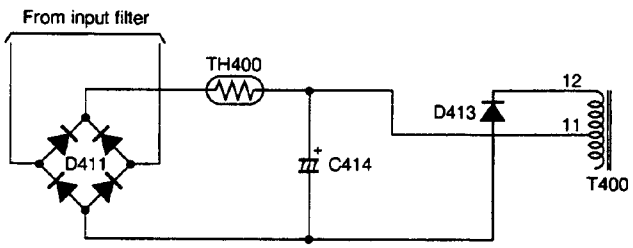


Fig. 8-21

3) Inrush Current Limiter

TH400, which is a power thermistor (normally, the resistance decreases by self-generating heat), is connected in order to limit the rush current input when the AC power is turned ON.

4) Switching Circuit

Rectangle wave is outputted from the IC403 pin (5), and controls the FET (Q402) gate. When pin (5) is at High, Q402 is turned ON, and current flows through the transformer T400 primary coil pin (11) → pin (9). At this time, the transformer secondary coil receives the current output induced from the primary stage.

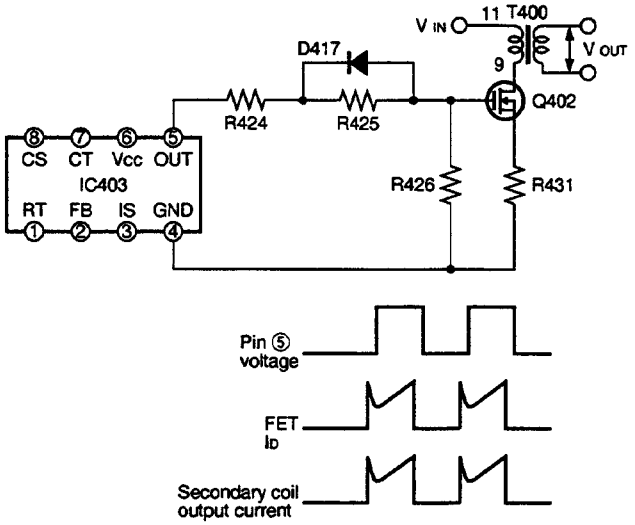


Fig. 8-22

5) Secondary Stage Output

+24 V Output

When the primary stage FET Q402 is turned ON, the D419 output sends current to the D1 side, and when the Q402 is OFF, current from energy stored in the L403 is sent from D2 → L403 → C422.

The output voltage control detects a difference between output voltage and reference voltage of IC405, and controls the IC406 cathode current.

The difference is fed back to IC403 in the primary stage, ensuring fixed voltage through governing the pin (5) output rectangle wave frequency duty.

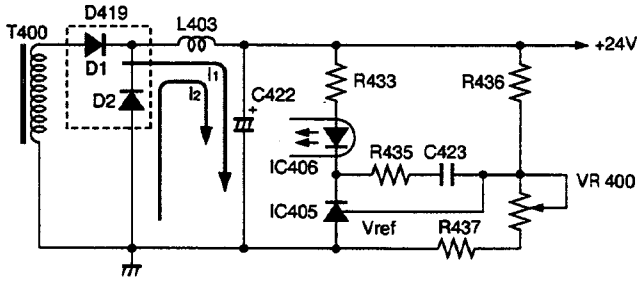


Fig. 8-23

8.5.2 Protective Functions

1) Excess Current Regulator Circuit

This circuit is a pulse by pulse type excess current regulator which detects the peak values of drain current for each pulse in a main switching FET (Q402) pulse condition. As shown in at right, it has +0.24 V detection voltage at the ground level.

The FET (Q402) drain current is inputted by the resistor R431 the IC403 IS terminal as a voltage signal. When this detection voltage exceeds the comparator C4 reference voltage (0.24 V), the comparator C4 output switches to HIGH, which sets the flip-flop output Q to HIGH. At this instant, the output is switched to OFF, cutting the current. This flip-flop output Q is reset in the next cycle, turning the output back to ON. By repeated operation of this process the excess current is regulated.

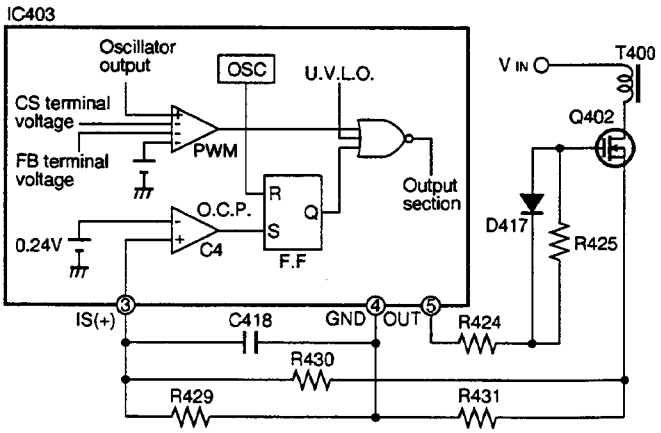


Fig. 8-24

Diagram at right indicates the timing chart for each section in the excess current state.

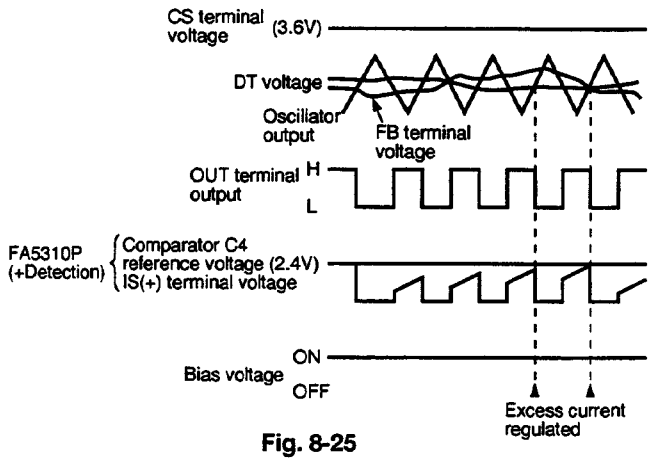


Fig. 8-25

2) Excess Load Cut-off Function

Diagram at right shows the excess load cut-off circuit section, and presents a timing chart for each section in the excess load state.

When voltage output falls owing to an excess load or a short-circuit, the FB terminal voltage increases. When this voltage exceeds the comparator C3 reference voltage (2.8 V), the comparator C3 output switches to Low, and turns OFF transistor Q. At this time, the clamp is disconnected for the CS terminal voltage which under normal operation is clamped at 3.6 V by the zener diode Zn, and capacitor C416 is once again charged by the constant current (10 μA), raising the CS terminal voltage. If this CS terminal voltage exceeds the comparator C2 output voltage is switched to High, and the bias circuit is turned OFF. Therefore, the IC403 will be switched to OFF Latch Mode, and output will be cut-off.

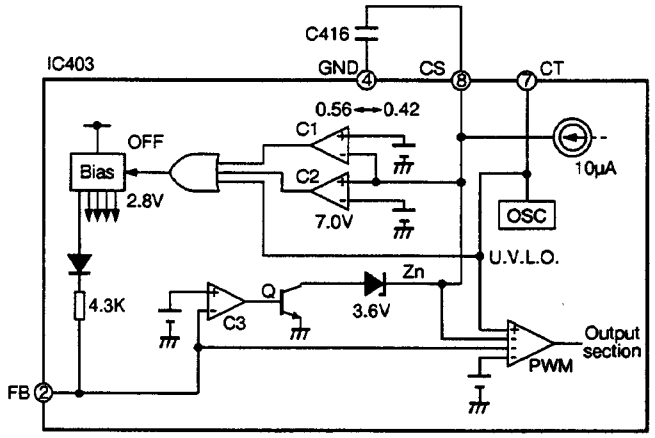


Fig. 8-26

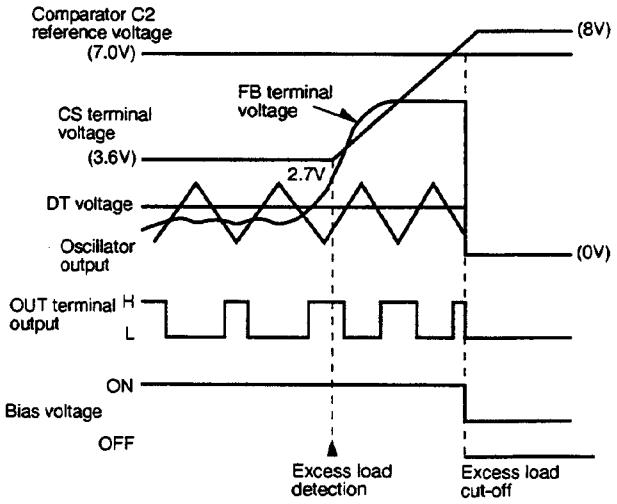


Fig. 8-27

3) Excess Voltage Cut-off Function

Diagram at right shows the excess voltage cut-off circuit section, and presents a timing chart for each section in the excess voltage state.

The photo-coupler IC407 is connected between CS and Vcc terminals. When the output voltage is in an excess voltage state, the photo-coupler IC407 switches to ON, and current is sent through resistor R423, raising the CS terminal voltage. If this CS terminal voltage exceeds the reference voltage (7.0 V), the comparator C2 output will switch to High, and turn OFF the bias circuit. Therefore, the IC403 will be switched to OFF Latch Mode, and output will be cut-off.

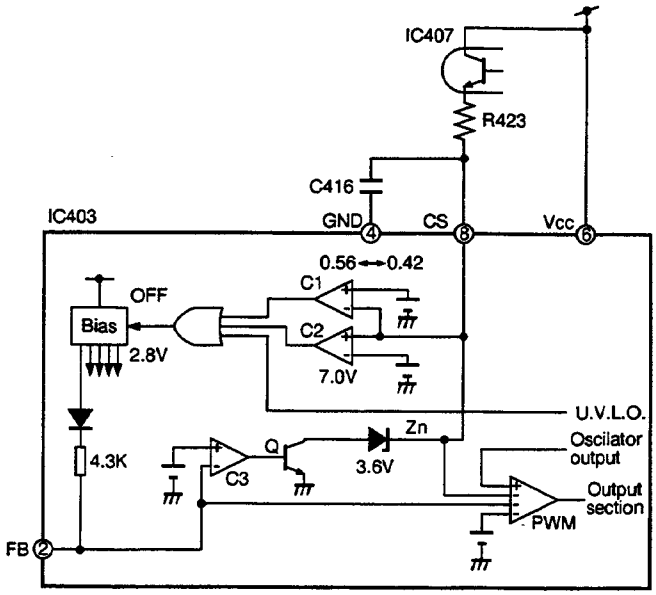


Fig. 8-28

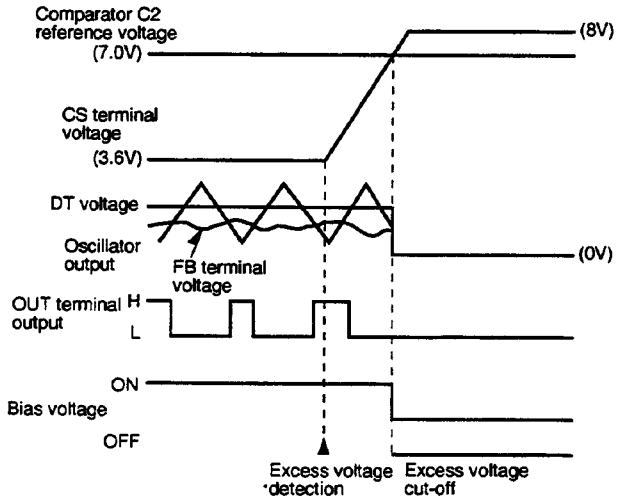


Fig. 8-29

The secondary stage is connected to the photo-coupler (IC407) LED side through diode, zener diode and resistor from each of the +5 V and +24 V output lines. As the voltage for each output rises, the zener diodes turn ON, starting operation of the above protective function.

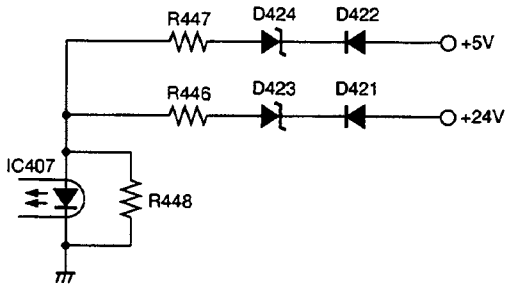


Fig. 8-30

8.5.2 Motor Drive Circuit

1) Function

Three stepper motors are used for screen feed, paper feed and paper cut.

2) Circuit Operation

(1) Screen-feed

The stepping pulse (MTSHA and MTSHB signals) are outputted from the gate array (IC6).
The pulse output from the gate array (IC6) is then inputted to the bipolar stepper motor driver (IC400).
IC400 is a constant current chopper system motor driver, which operates when the MTSON signal from IC6 is at high level (5 V), and stops supply of direct current to the motor when the output is at low level.

Circuit diagram is as follows:

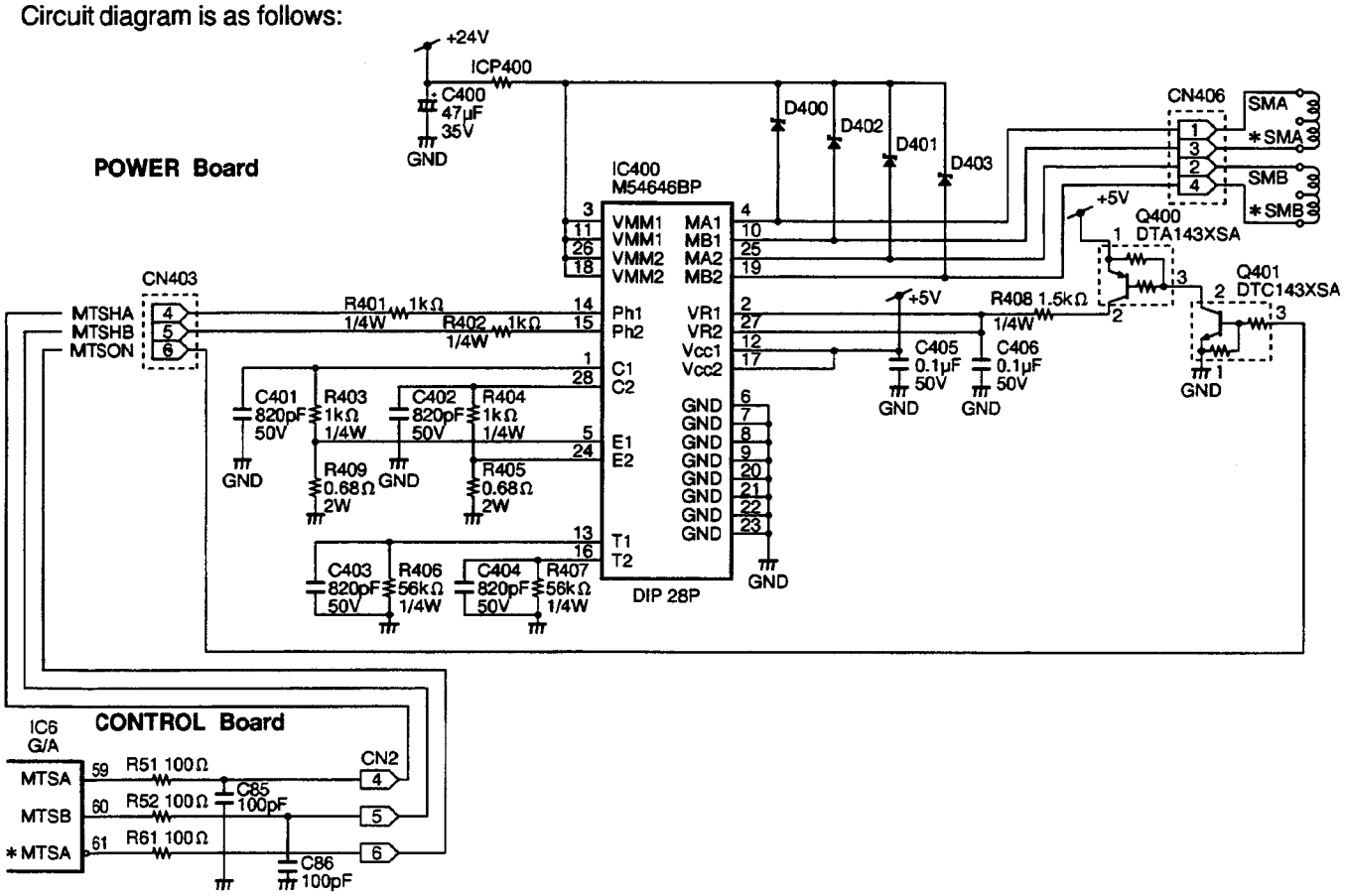


Fig. 8-31

Timing chart is as follows:

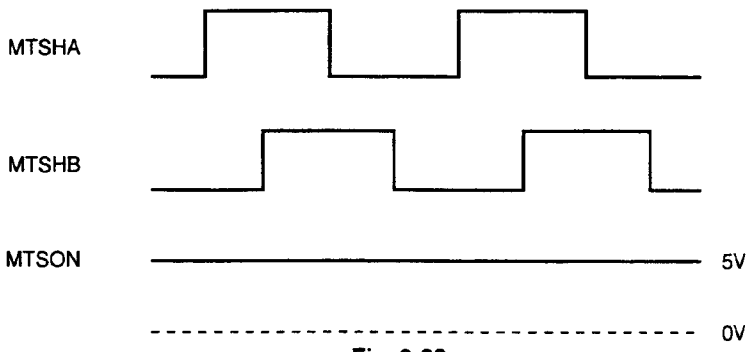


Fig. 8-32

(2) Paper-feed / Paper-cut

Stepping pulses are outputted from the gate array (IC6), causing drivers IC401, IC402 to go ON. It makes a one-step rotation for each pulse.

Circuit diagram is as follows:

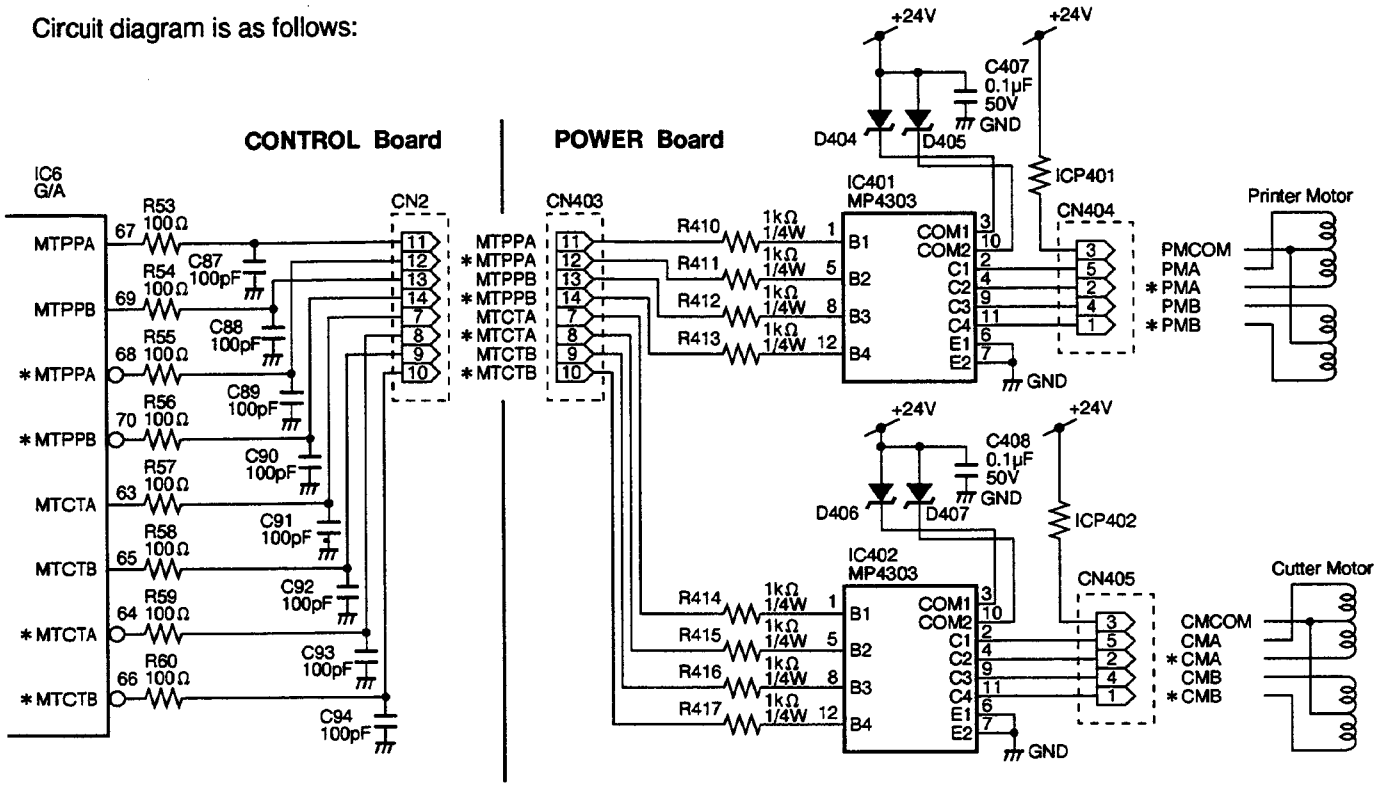


Fig. 8-33

Timing chart is as follows:

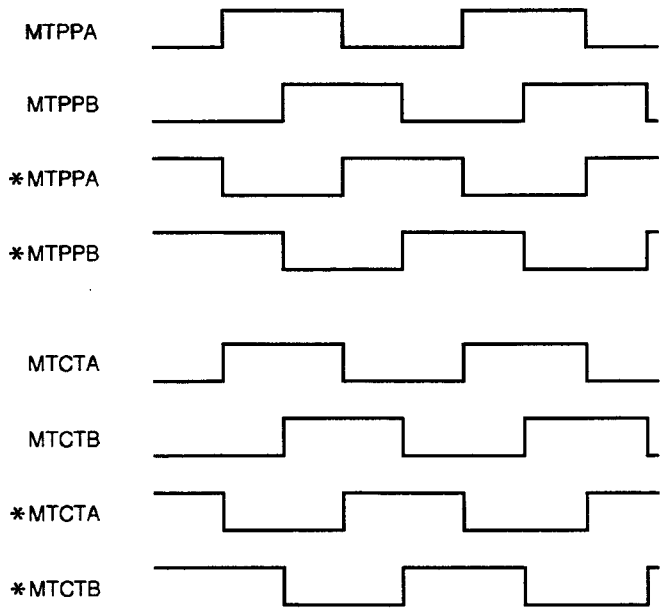


Fig. 8-34

8.5.3 Lamp Drive Circuit

1) Function

Lamp driver circuit is on the POWER Board.
Control signals for the lamp driver circuit are supplied from the CPU.
Lamp driver lights the fluorescent lamp at high frequency to prevent flickering.
It also preheats the filament just before turning it ON to reduce blackening (increase its life).

2) Circuit Operation

CPU makes two signals, LAMPPRE and LAMPTON.
These timing are shown below:

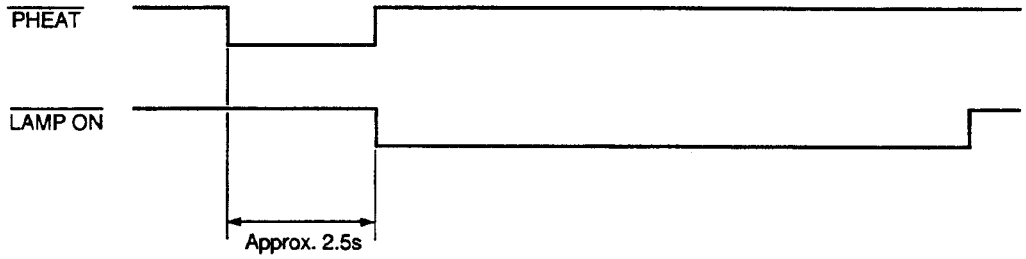


Fig. 8-35

Transistor Q406 in the lamp driver turns ON by the LAMPPRE signal, so preheat current flows through the lamp filaments. Then self-oscillating circuit composed of Q407, Q408, T401, C435 and L405 start oscillating at about 47 kHz by the LAMPTON signal.
It supplies 110 V AC, 47 kHz power source to the lamp, so the lamp turns ON.

Circuit diagram is as follows:

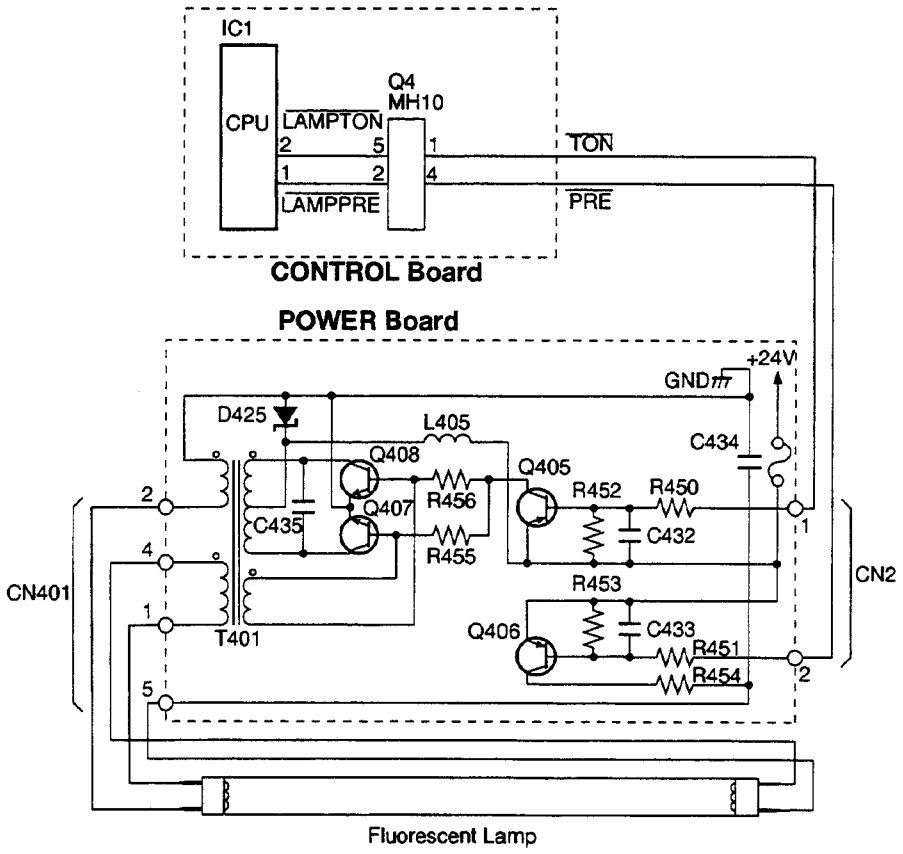


Fig. 8-36

8.6 PANEL Board

In this Board, one 7-segment LED (Multi-Copy/Error Indicator), one LED (Contrast Indicator) and five key switches (Copy, Advance, Contrast, Multi-Copy/Stop, 2-Screen Copy Keys) are included.

8.6.1 Multi-Copy/Error Indicator

The signal from the gate array (IC6) is inputted to the LED driver from the inverter (IC8) and the transistor (Q2). The output is then inputted to the 7-segment LED (IC200) on the PANEL Board.
When the gate array (IC6) output signals 7SEGA–G are at high level, the 7-segment LED (IC200) turns ON.

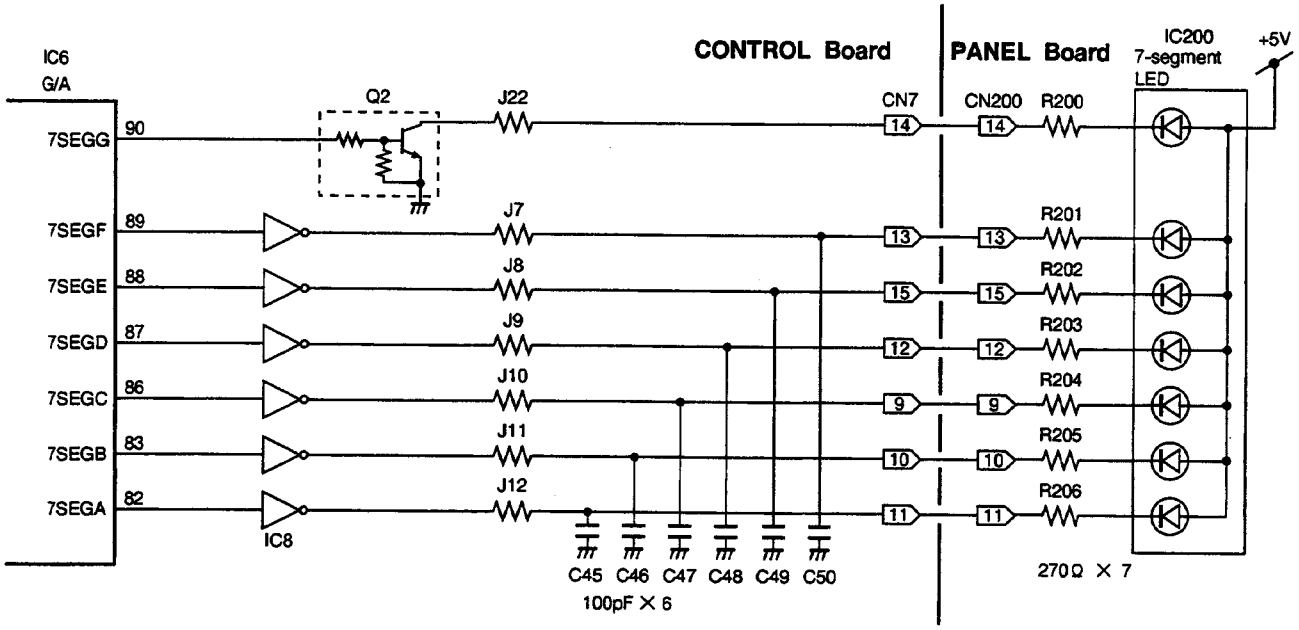


Fig. 8-37

8.6.2 Contrast Indicator

The LEDDEN signal from the CPU (IC1) is outputted, and inputted to the transistor (Q3). The Q3 output is applied to the density LED (D200).

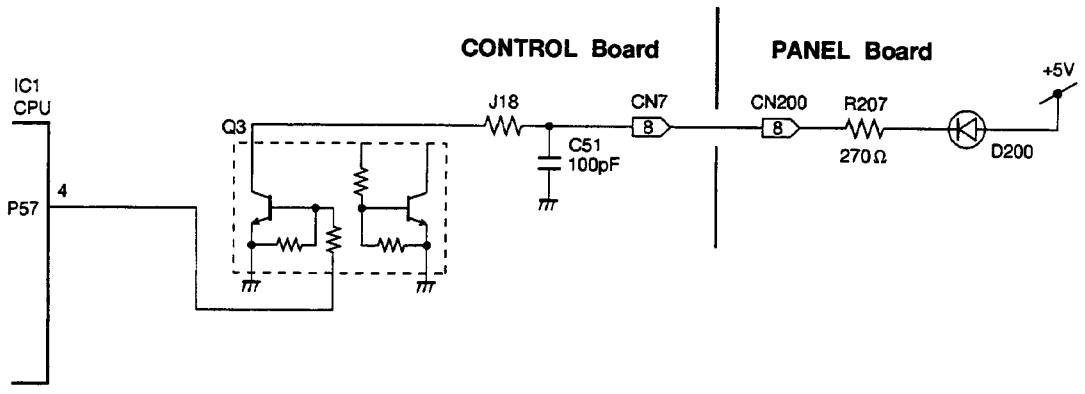


Fig. 8-38

When the CPU (IC1) output is at high level (5 V), the contrast indicator turns ON.

8.6.3 Key Switches

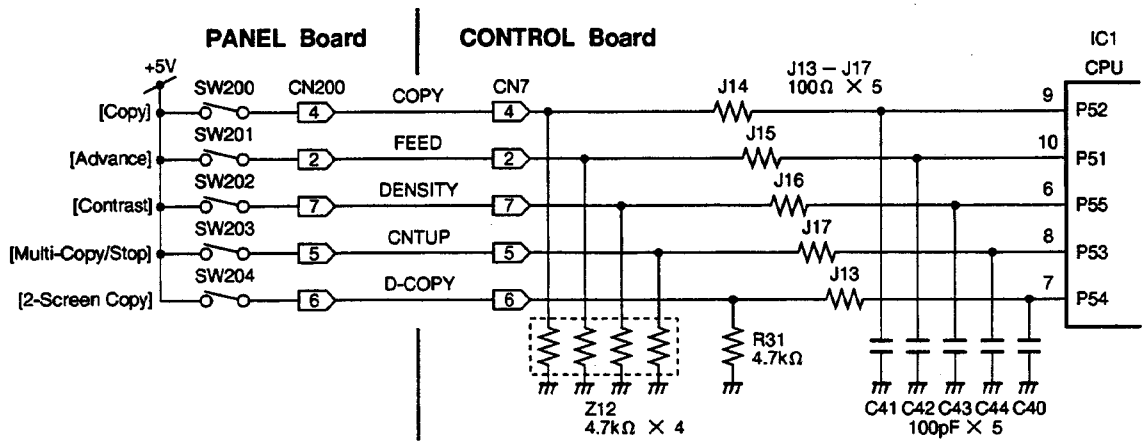


Fig. 8-39

When the key is pressed, a HIGH signal is inputted to the CPU.
According to the signal, the CPU starts the programmed function.
When various system errors are detected, the CPU displays these on the 7-segment LED.

8.7 Explanation of Connectors

Note: Signal names which begin with asterisk (*) indicate that the corresponding signal is LOW when active.

CN1 [Power (+5V)] CONTROL Board

No.	Signal Name	Description
1	+5V	DC +5V
2	+5V	DC +5V
3	GND	Ground
4	GND	Ground

CN2 [Motor/Lamp] CONTROL Board

No.	Signal Name	Description
1	*LAMPON	Lamp turn ON signal
2	*PHEAT	Lamp preheat signal
3	*THON	Thermal head power ON signal
4	MTSHA	Screen motor drive signal
5	MTSHB	Screen motor drive signal
6	MTSON	Screen motor drive signal
7	MTCTA	Cutter motor drive signal
8	*MTCTA	Cutter motor drive signal
9	MTCTB	Cutter motor drive signal
10	*MTCTB	Cutter motor drive signal
11	MTPPA	Printer motor drive signal
12	*MTPPA	Printer motor drive signal
13	MTPPB	Printer motor drive signal
14	*MTPPB	Printer motor drive signal

CN3 [Screen Home Sensor] CONTROL Board

No.	Signal Name	Description
1	+5V	DC +5V
2	SENST	Screen home sensor signal
3	GND	Ground

CN4 [Paper Empty Sensor] CONTROL Board

No.	Signal Name	Description
1	SENPA	Paper empty sensor signal
2	GND	Ground

CN5 [Cutter Home Sensor] CONTROL Board

No.	Signal Name	Description
1	SENCT	Cutter home sensor signal
2	GND	Ground

CN6 [Thermal Head] CONTROL Board

No.	Signal Name	Description
1	THERM	Thermal head temperature signal
2	N.C	Not connected
3	*STB1	Data strobe signal 1
4	*STB2	Data strobe signal 2
5	*STB3	Data strobe signal 3
6	*STB4	Data strobe signal 4
7	CLKHD	Head clock signal
8	*LATCH	Head latch signal
9	HDATA	Head data

CN7 [PANEL Board] CONTROL Board

No.	Signal Name	Description
1	+5V	DC +5V
2	FEED	Feed key input signal
3	GND	Ground
4	COPY	Print key input signal
5	CNTUP	Count-up key input signal
6	D-COPY	2-screen print key input signal
7	DENSITY	Density key input signal
8	*LEDDEN	LED turn ON signal
9	*7SEGC	Segment-C turn ON signal
10	*7SEGB	Segment-B turn ON signal
11	*7SEGA	Segment-A turn ON signal
12	*7SEGD	Segment-D turn ON signal
13	*7SEGF	Segment-F turn ON signal
14	*7SEGG	Segment-G turn ON signal
15	*7SEGE	Segment-E turn ON signal

CN8 [Optional Unit] CONTROL Board

No.	Signal Name	Description
1	A0	Address A0
2	A1	Address A1
3	A3	Address A3
4	A5	Address A5
5	A7	Address A7
6	A9	Address A9
7	A11	Address A11
8	A13	Address A13
9	A15	Address A15
10	D0	Data D0
11	D2	Data D2
12	D4	Data D4
13	D6	Data D6
14	+5V	DC +5V
15	+5V	DC +5V
16	*CENSTB	Strobe signal of centronics (Printer output signal)
17	CEND1	Data 1 of centronics
18	CEND3	Data 3 of centronics
19	CEND5	Data 5 of centronics
20	CEND7	Data 7 of centronics
21	*CENBSY	Busy signal of centronics (Printer input signal)
22	*CENSCT	Select signal of centronics (Printer input signal)
23	*CENINT	Initialize signal of centronics (Printer output signal)
24	CENPON	Not used
25	GND	Ground
26	GND	Ground
27	A2	Address A2
28	A4	Address A4
29	A6	Address A6
30	A8	Address A8

CN8 (continued)

No.	Signal Name	Description
31	A10	Address A10
32	A12	Address A12
33	A14	Address A14
34	*ROMCS	External ROM chip select signal
35	D1	Data D1
36	D3	Data D3
37	D5	Data D5
38	D7	Data D7
39	OPENB	Enable signal for optional unit
40	PRISEL	Select signal for printer
41	CEND0	Data 0 of centronics
42	CEND2	Data 2 of centronics
43	CEND4	Data 4 of centronics
44	CEND6	Data 6 of centronics
45	CENACK	Acknowledge pulse of centronics (Printer input signal)
46	*CENPE	Paper empty signal of centronics (Printer input signal)
47	*CENATX	Auto-feed XT signal of centronics (Printer output signal)
48	CENERR	Error signal of centronics (Printer input signal)
49	*CENSTI	SLCT IN signal of centronics (Printer output signal)
50	GND	Ground

CN9 [CCD] CONTROL Board

No.	Signal Name	Description
1	GND	Ground
2	CCD	CCD output signal
3	GND	Ground
4	CLK2	CCD clock
5	SDE	Serial data enable signal
6	CLK1	CCD clock
7	CCDTG	CCD reset clock
8	AVDD	Analog DC +5V

CN100 [CONTROL Board] CCD Board

No.	Signal Name	Description
1	GND	Ground
2	CCD	CCD output signal
3	GND	Ground
4	CLK2	CCD clock
5	SDE	Serial data enable signal
6	CLK1	CCD clock
7	CCDTG	CCD reset clock
8	AVDD	Analog DC +5V

CN200 [CONTROL Board] PANEL Board

No.	Signal Name	Description
1	+5V	DC +5V
2	FEED	Feed key input signal
3	GND	Ground
4	COPY	Print key input signal
5	CNTUP	Count-up key input signal
6	D-COPY	2-screen print key input signal
7	DENSITY	Density key input signal
8	*LEDDEN	LED turn ON signal
9	*7SEGC	Segment-C turn ON signal
10	*7SEGB	Segment-B turn ON signal
11	*7SEGA	Segment-A turn ON signal
12	*7SEGD	Segment-D turn ON signal
13	*7SEGF	Segment-F turn ON signal
14	*7SEGG	Segment-G turn ON signal
15	*7SEGE	Segment-E turn ON signal

CN300 [CONTROL Board] HOME-SENSOR Board

No.	Signal Name	Description
1	+5V	DC +5V
2	SENST	Screen home sensor signal
3	GND	Ground

CN400 [Power Switch] POWER Board

No.	Signal Name	Description
L	LIVE	AC120V power source [AC220–240V power source]
N	NEUTRAL	Common line

CN401 [Fluorescent Lamp] POWER Board

No.	Signal Name	Description
1	LAMP HOT	Fluorescent lamp drive signal
2	LAMP HOT	Fluorescent lamp drive signal
3	N.C	Not connected
4	LAMP COLD	Fluorescent lamp drive signal
5	LAMP COLD	Fluorescent lamp drive signal

CN402 [CONTROL Board] POWER Board

No.	Signal Name	Description
1	5V	DC +5V
2	5V	DC +5V
3	GND	Ground
4	GND	Ground

CN403 [CONTROL Board] POWER Board

No.	Signal Name	Description
1	*LAMPON	Lamp turn ON signal
2	*PHEAT	Lamp preheat signal
3	*THON	Thermal head power ON signal
4	MTSHA	Screen motor drive signal
5	MTSHB	Screen motor drive signal
6	MTSON	Screen motor drive signal
7	MTCTA	Cutter motor drive signal
8	*MTCTA	Cutter motor drive signal
9	MTCTB	Cutter motor drive signal
10	*MTCTB	Cutter motor drive signal
11	MTPPA	Printer motor drive signal
12	*MTPPA	Printer motor drive signal
13	MTPPB	Printer motor drive signal
14	*MTPPB	Printer motor drive signal

CN404 [Printer Motor] POWER Board

No.	Signal Name	Description
1	*PMB	Printer motor drive signal
2	*PMA	Printer motor drive signal
3	PMCOM	Drive power supply
4	PMB	Printer motor drive signal
5	PMA	Printer motor drive signal

CN405 [Cutter Motor] POWER Board

No.	Signal Name	Description
1	*CMB	Cutter motor drive signal
2	*CMA	Cutter motor drive signal
3	CMCOM	Drive power supply
4	CMB	Cutter motor drive signal
5	CMA	Cutter motor drive signal

CN406 [Screen Motor] POWER Board

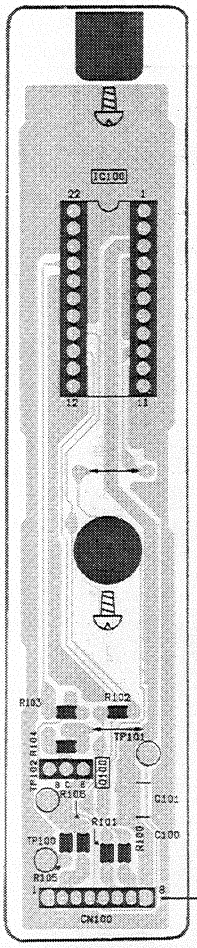
No.	Signal Name	Description
1	SMA	Screen motor drive signal
2	SMB	Screen motor drive signal
3	*SMA	Screen motor drive signal
4	*SMB	Screen motor drive signal

CN407 [Thermal Head] POWER Board

No.	Signal Name	Description
1	24V	DC +24V
2	24V	DC +24V
3	24V	DC +24V
4	GND	Ground
5	GND	Ground
6	GND	Ground
7	5V	DC +5V

SECTION 9
CIRCUIT BOARDS

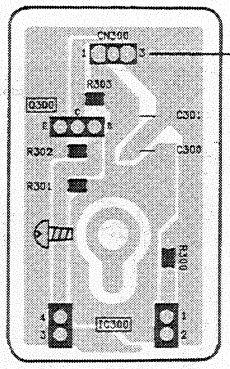
CCD Board



CN100

No.	Signal Name	Direction
1	GND	—
2	CCD	Out
3	GND	—
4	CLK2	In
5	SDE	In
6	CLK1	In
7	CCDTG	In
8	AVDD	—

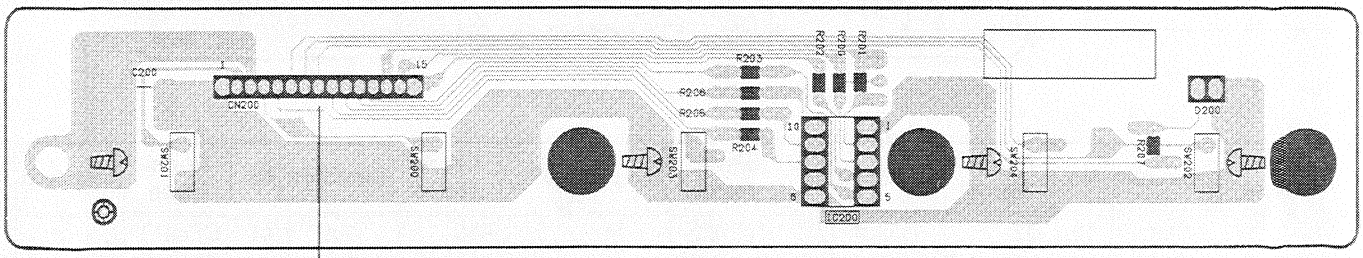
HOME-SENSOR Board



CN300

No.	Signal Name	Direction
1	+5V	—
2	SENST	Out
3	GND	—

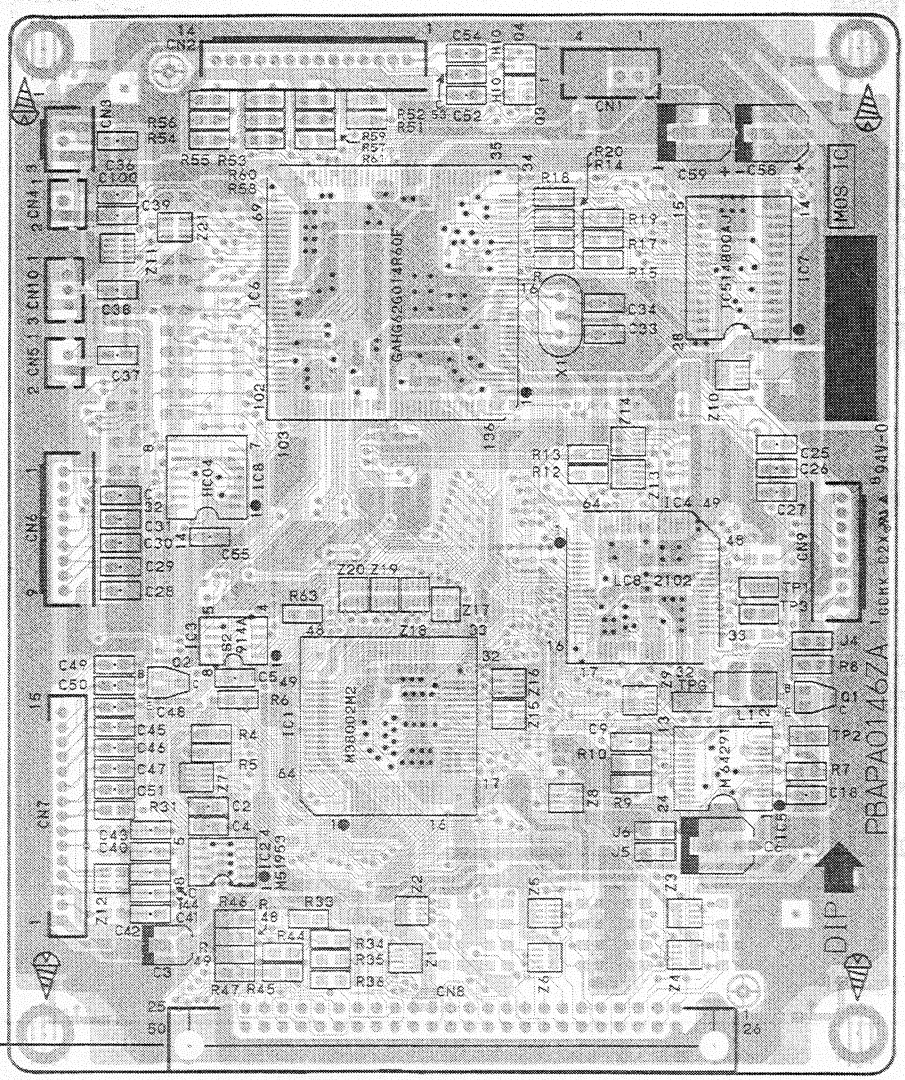
PANEL Board



CN200

No.	Signal Name	Direction	No.	Signal Name	Direction	No.	Signal Name	Direction
1	+5V	—	6	D-COPY	Out	11	*7SEGA	In
2	FEED	Out	7	DENSITY	Out	12	*7SEGD	In
3	GND	—	8	*LEDDEN	In	13	*7SEGF	In
4	COPY	Out	9	*7SEGC	In	14	*7SEGG	In
5	CNTUP	Out	10	*7SEGB	In	15	*7SEGE	In

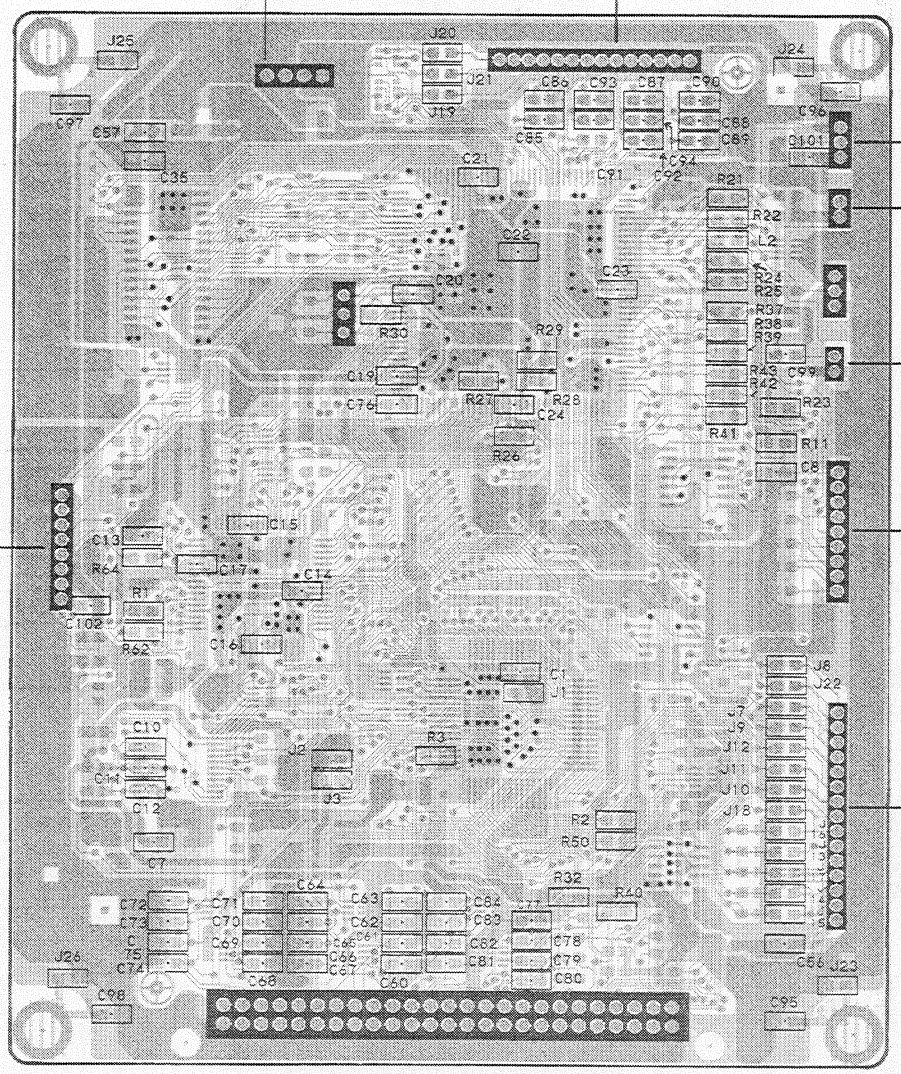
CONTROL Board (Parts side)



CN8

No.	Signal Name	Direction	No.	Signal Name	Direction	No.	Signal Name	Direction	No.	Signal Name	Direction	No.	Signal Name	Direction
1	A0	Out	11	D2	In/Out	21	*CENBSY	In	31	A10	Out	41	CEND0	Out
2	A1	Out	12	D4	In/Out	22	*CENSCT	In	32	A12	Out	42	CEND2	Out
3	A3	Out	13	D6	In/Out	23	*CENINT	Out	33	A14	Out	43	CEND4	Out
4	A5	Out	14	+5V	—	24	CENPON	In	34	*ROMCS	Out	44	CEND6	Out
5	A7	Out	15	+5V	—	25	GND	—	35	D1	In/Out	45	CENACK	In
6	A9	Out	16	*CENSTB	Out	26	GND	—	36	D3	In/Out	46	*CENPE	In
7	A11	Out	17	CEND1	Out	27	A2	Out	37	D5	In/Out	47	*CENATX	Out
8	A13	Out	18	CEND3	Out	28	A4	Out	38	D7	In/Out	48	CENERR	In
9	A15	Out	19	CEND5	Out	29	A6	Out	39	OPENB	In	49	*CENSTI	Out
10	D0	In/Out	20	CEND7	Out	30	A8	Out	40	PRISEL	In	50	GND	—

CONTROL Board (Solder side)



CN1

No.	Signal Name	Direction
1	+5V	—
2	+5V	—
3	GND	—
4	GND	—

CN2

No.	Signal Name	Direction	No.	Signal Name	Direction
1	*LAMPON	Out	8	*MTCTA	Out
2	*PHEAT	Out	9	MTCTB	Out
3	*THON	Out	10	*MTCTB	Out
4	MTSHA	Out	11	MTPPA	Out
5	MTSHB	Out	12	*MTPPA	Out
6	MTSON	Out	13	MTPPB	Out
7	MTCTA	Out	14	*MTPPB	Out

CN3

No.	Signal Name	Direction
1	+5V	—
2	SENST	In
3	GND	—

CN4

No.	Signal Name	Direction
1	SENPA	In
2	GND	—

CN5

No.	Signal Name	Direction
1	SENCT	In
2	GND	—

CN6

No.	Signal Name	Direction
1	THERM	In
2	N.C	Out
3	*STB1	Out
4	*STB2	Out
5	*STB3	Out
6	*STB4	Out
7	CLKHD	Out
8	*LATCH	Out
9	HDATA	Out

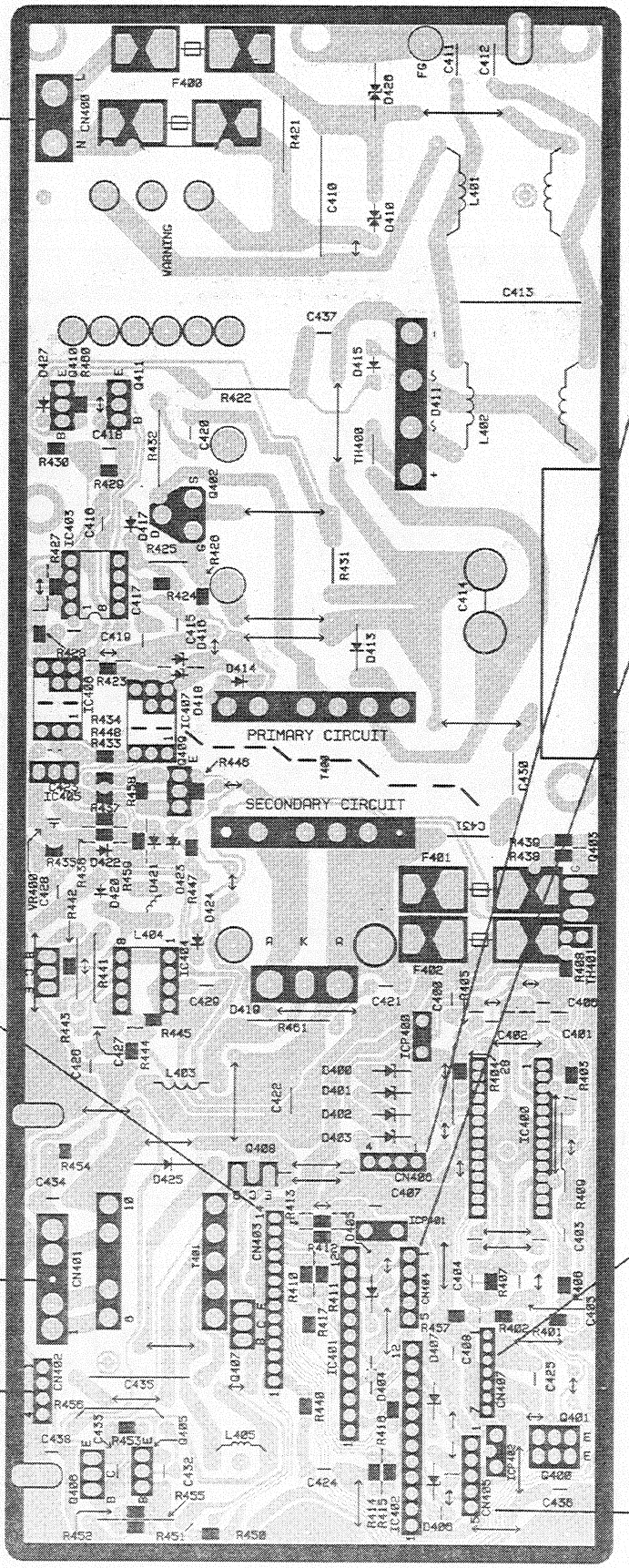
CN9

No.	Signal Name	Direction
1	GND	—
2	CCD	In
3	GND	—
4	CLK2	Out
5	SDE	Out
6	CLK1	Out
7	CCDTG	Out
8	AVDD	—

CN7

No.	Signal Name	Direction	No.	Signal Name	Direction	No.	Signal Name	Direction
1	+5V	—	6	D-COPY	In	11	*7SEGA	Out
2	FEED	In	7	DENSITY	In	12	*7SEGD	Out
3	GND	—	8	*LEDDEN	Out	13	*7SEGF	Out
4	COPY	In	9	*7SEGC	Out	14	*7SEGG	Out
5	CNTUP	In	10	*7SEGB	Out	15	*7SEGE	Out

POWER Board (for U.S.A., Canada, Taiwan)



CN400

No.	Signal Name	Direction
L	LIVE	In
N	NEUTRAL	—

CN403

No.	Signal Name	Direction
1	*LAMPON	In
2	*PHEAT	In
3	*THON	In
4	MTSHA	In
5	MTSHB	In
6	MTSON	In
7	MTCTA	In
8	*MTCTA	In
9	MTCTB	In
10	*MTCTB	In
11	MTPPA	In
12	*MTPPA	In
13	MTPPB	In
14	*MTPPB	In

CN401

No.	Signal Name	Direction
1	LAMP HOT	Out
2	LAMP HOT	Out
3	N.C	—
4	LAMP COLD	Out
5	LAMP COLD	Out

CN402

No.	Signal Name	Direction
1	+5V	—
2	+5V	—
3	GND	—
4	GND	—

CN406

No.	Signal Name	Direction
1	SMA	Out
2	SMB	Out
3	*SMA	Out
4	*SMB	Out

CN404

No.	Signal Name	Direction
1	*PMB	Out
2	*PMA	Out
3	PMCOM	—
4	PMB	Out
5	PMA	Out

CN407

No.	Signal Name	Direction
1	24V	—
2	24V	—
3	24V	—
4	GND	—
5	GND	—
6	GND	—
7	5V	—

CN405

No.	Signal Name	Direction
1	*CMB	Out
2	*CMA	Out
3	CMCOM	—
4	CMB	Out
5	CMA	Out

POWER Board (for U.K., Germany, Spain, Australia, Southeast Asia)

CN400

No.	Signal Name	Direction
L	LIVE	In
N	NEUTRAL	—

CN403

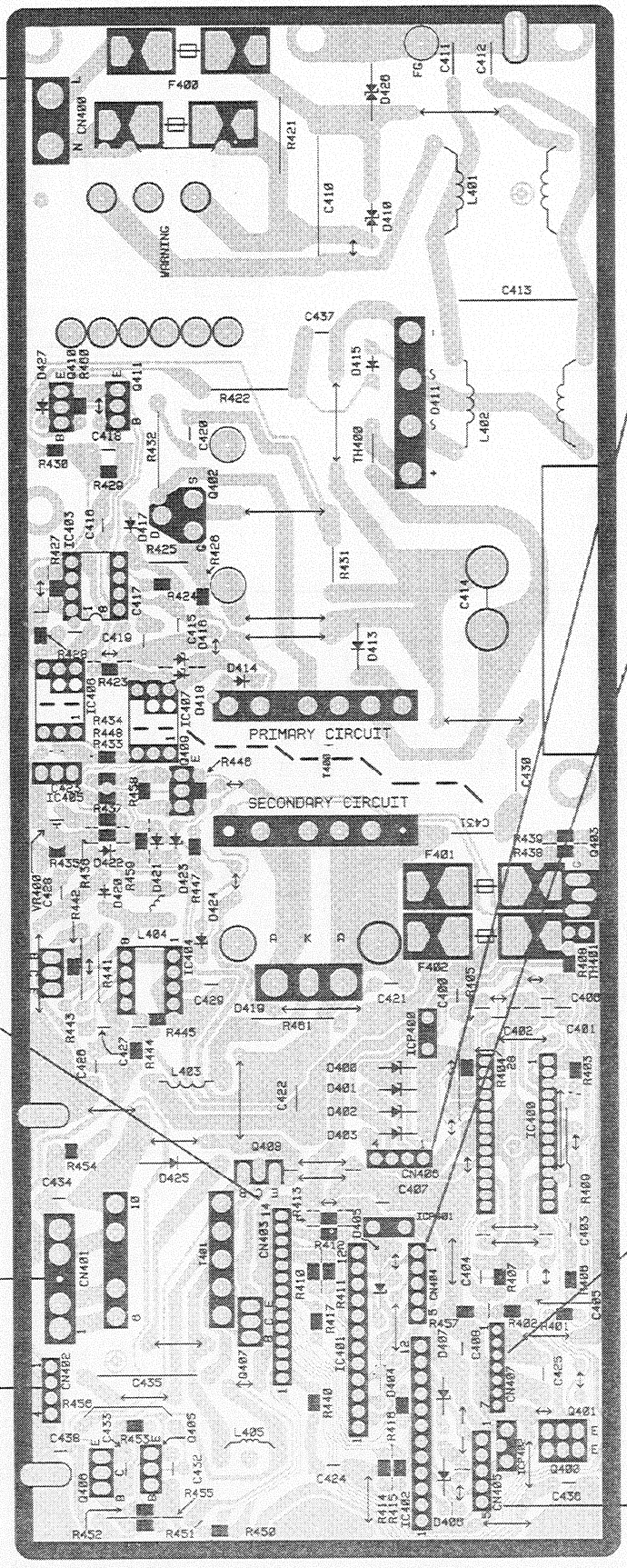
No.	Signal Name	Direction
1	*LAMPON	In
2	*PHEAT	In
3	*THON	In
4	MTSHA	In
5	MTSHB	In
6	MTSON	In
7	MTCTA	In
8	*MTCTA	In
9	MTCTB	In
10	*MTCTB	In
11	MTPPA	In
12	*MTPPA	In
13	MTPPB	In
14	*MTPPB	In

CN401

No.	Signal Name	Direction
1	LAMP HOT	Out
2	LAMP HOT	Out
3	N.C	—
4	LAMP COLD	Out
5	LAMP COLD	Out

CN402

No.	Signal Name	Direction
1	+5V	—
2	+5V	—
3	GND	—
4	GND	—



CN406

No.	Signal Name	Direction
1	SMA	Out
2	SMB	Out
3	*SMA	Out
4	*SMB	Out

CN404

No.	Signal Name	Direction
1	*PMB	Out
2	*PMA	Out
3	PMCOM	—
4	PMB	Out
5	PMA	Out

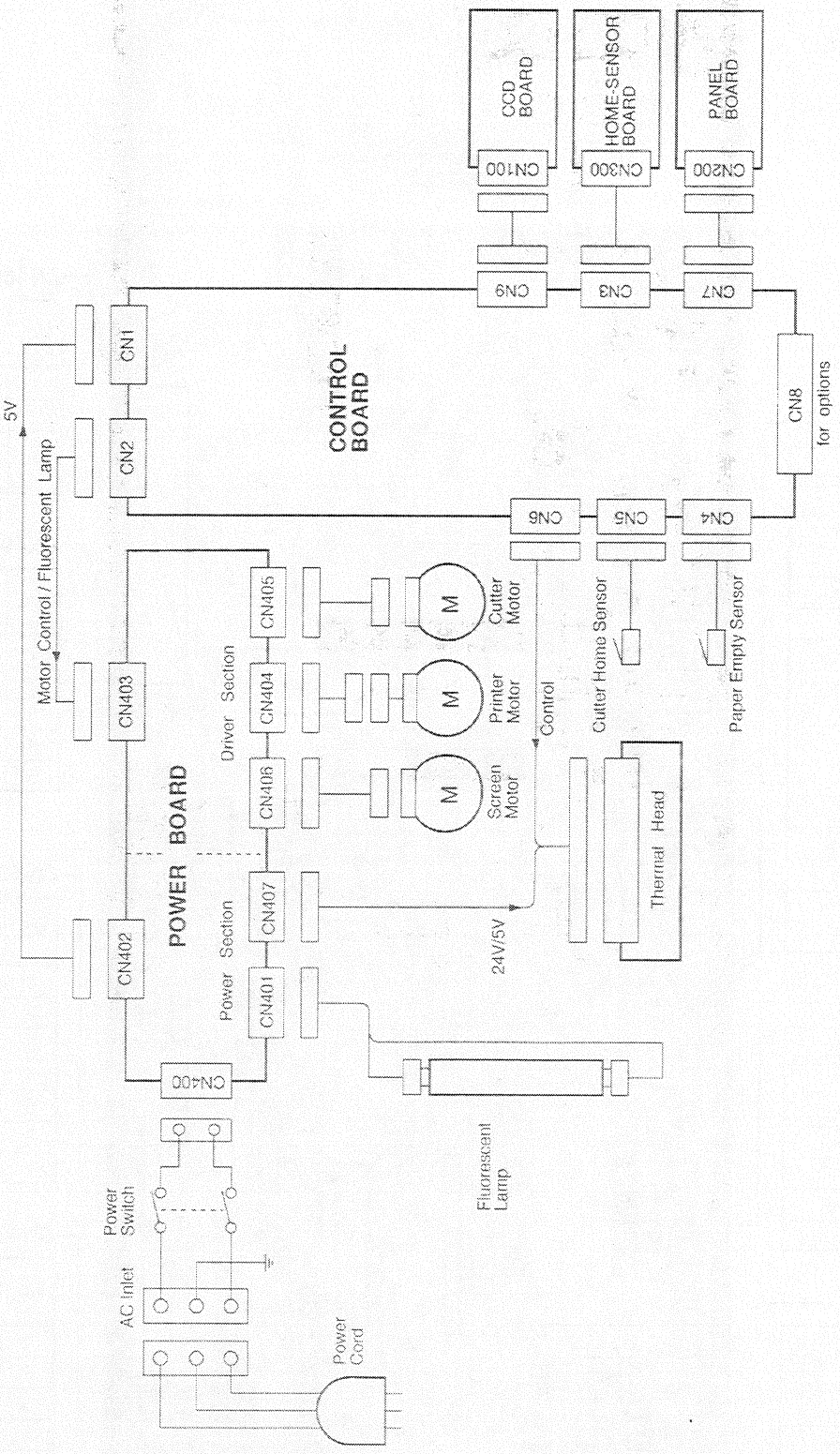
CN407

No.	Signal Name	Direction
1	24V	—
2	24V	—
3	24V	—
4	GND	—
5	GND	—
6	GND	—
7	5V	—

CN405

No.	Signal Name	Direction
1	*CMB	Out
2	*CMA	Out
3	CMCOM	—
4	CMB	Out
5	CMA	Out

SECTION 10
WIRING DIAGRAM



SECTION 11
SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENT IN THE SHADED AREAS OF THIS SCHEMATIC.

11.1 CONTROL Board ..... 1 to 8

11.2 CCD Board 9

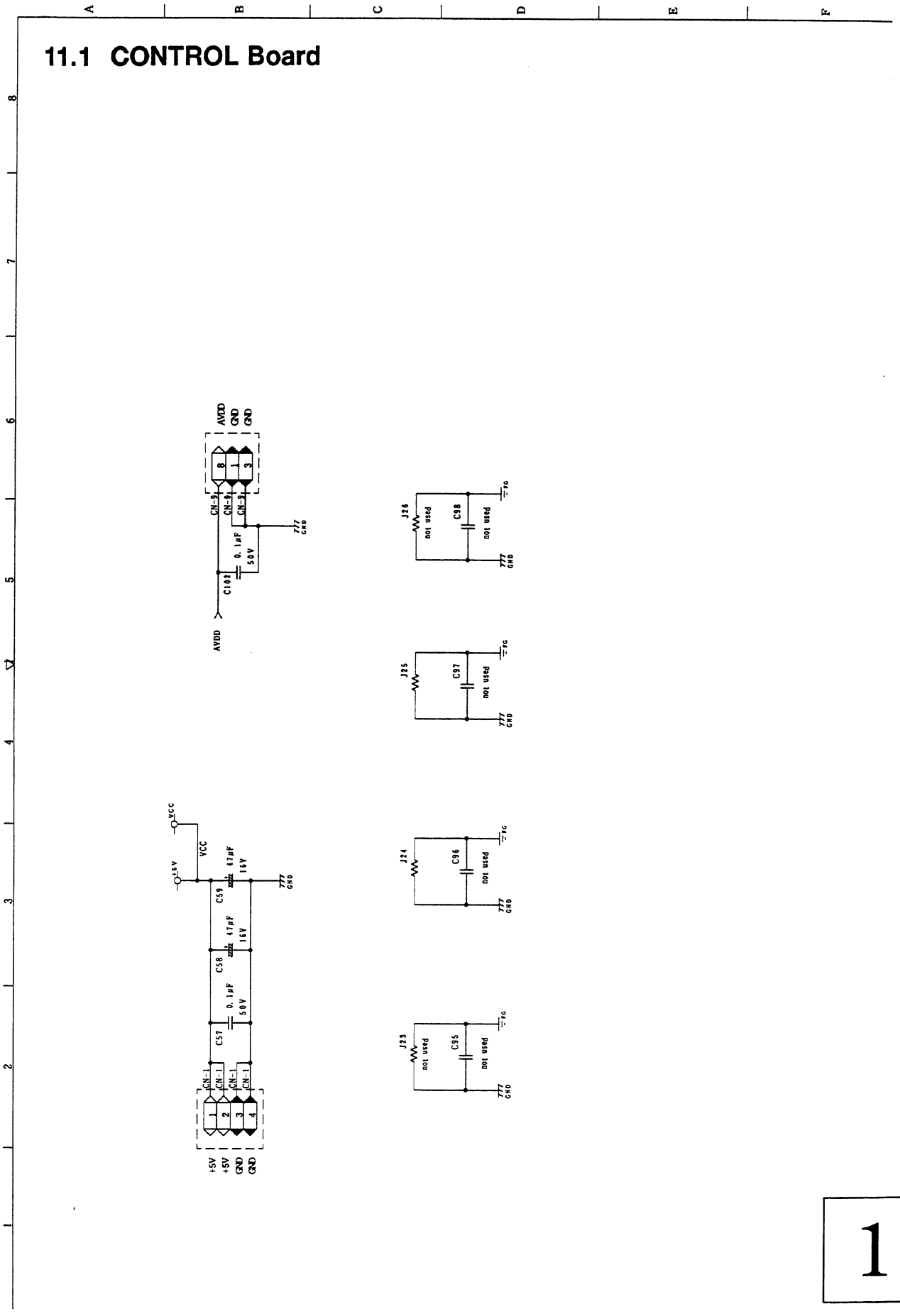
11.3 HOME-SENSOR Board 10

11.4 POWER Board ..... 11 to 15

11.5 PANEL Board 16

Note: This Schematic Diagram is the latest at the time of printing and subject to change without notice.

11.1 CONTROL Board



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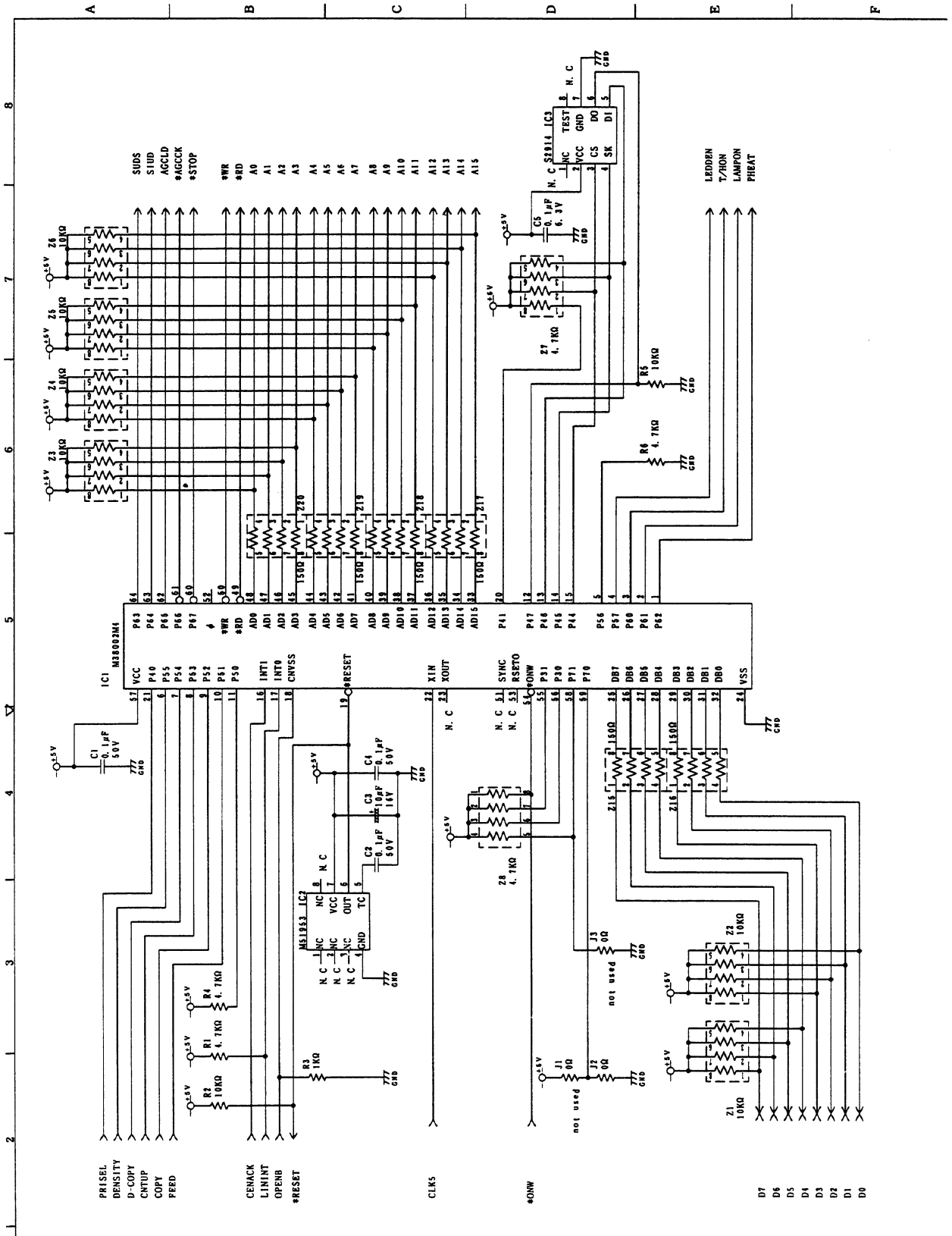

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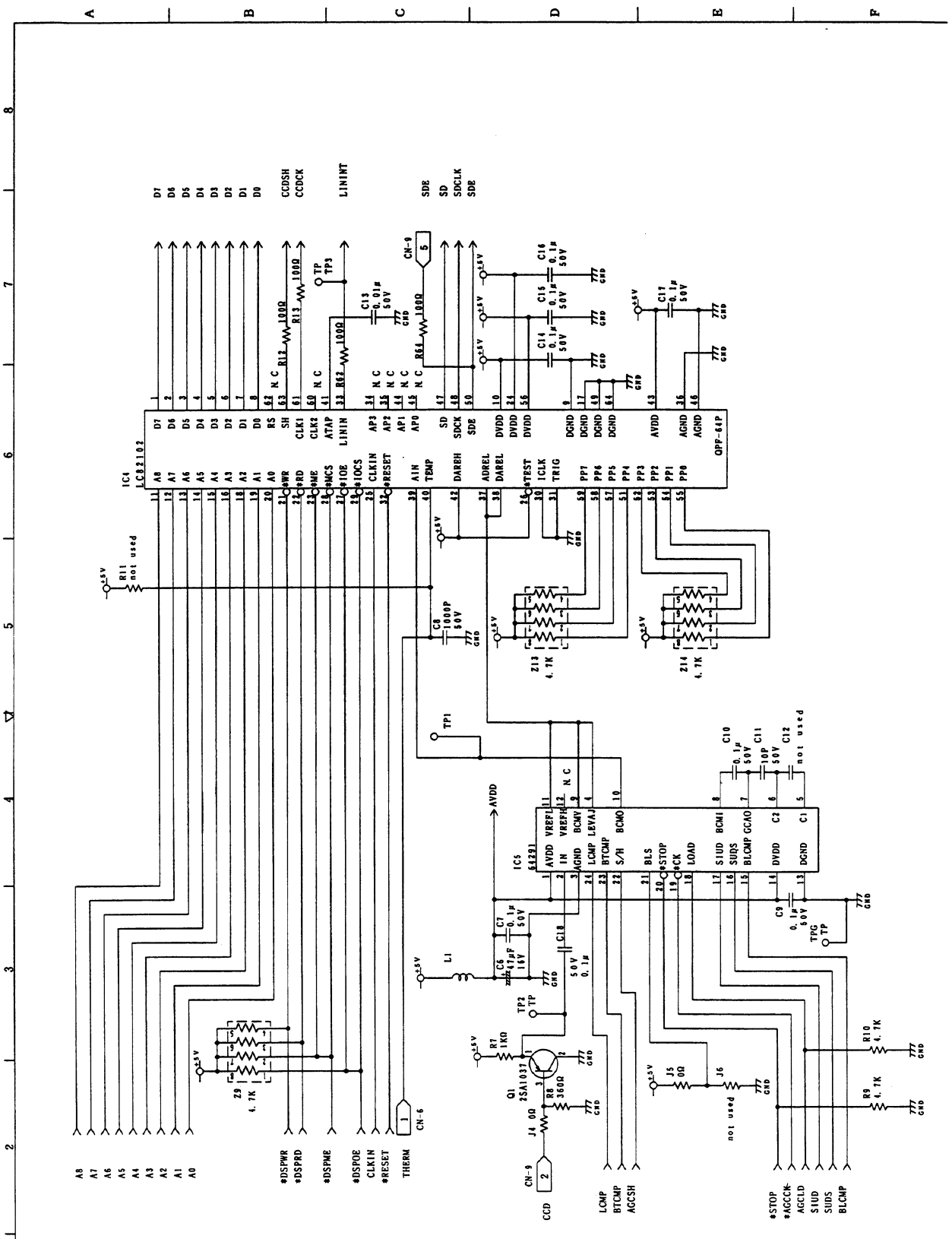

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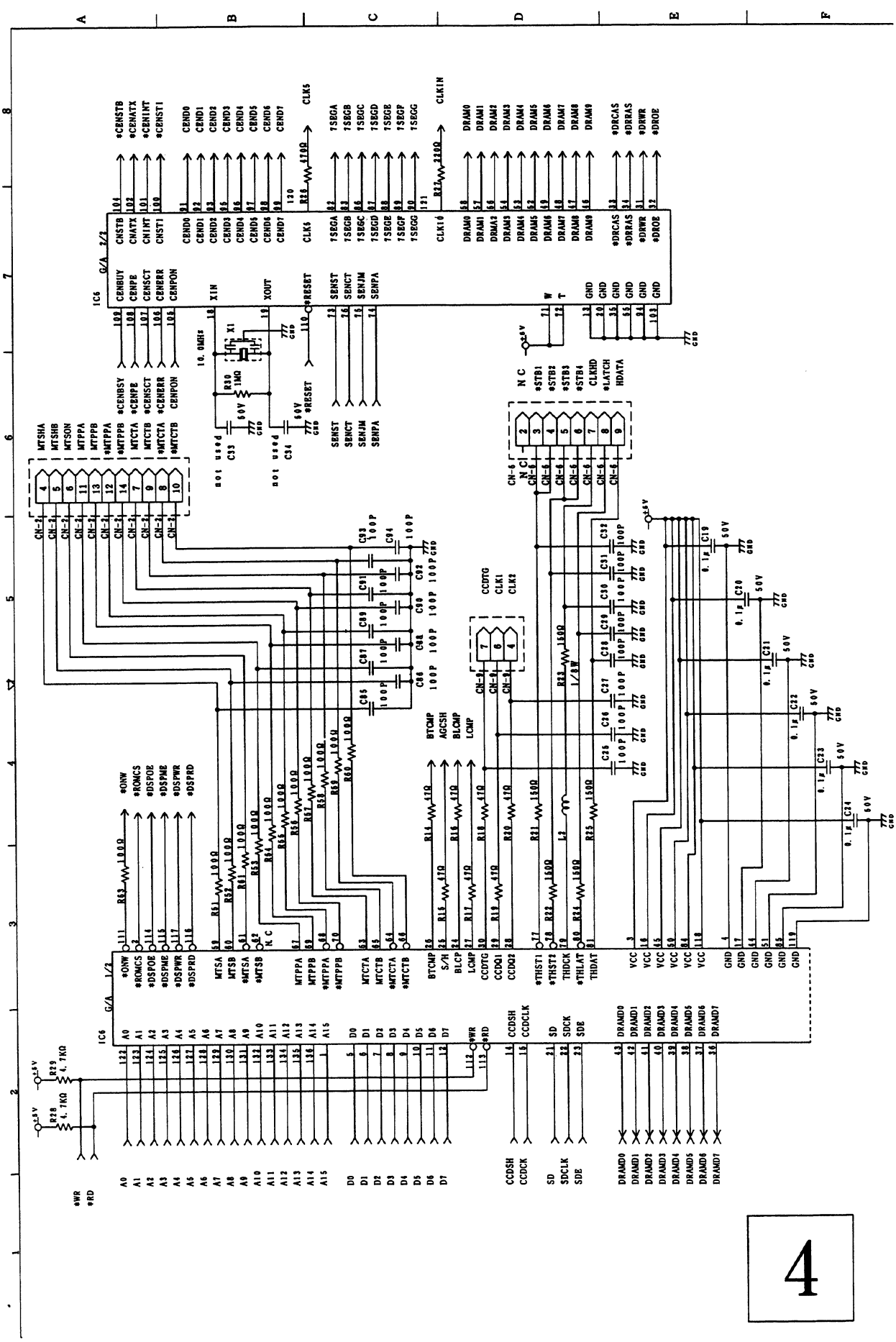

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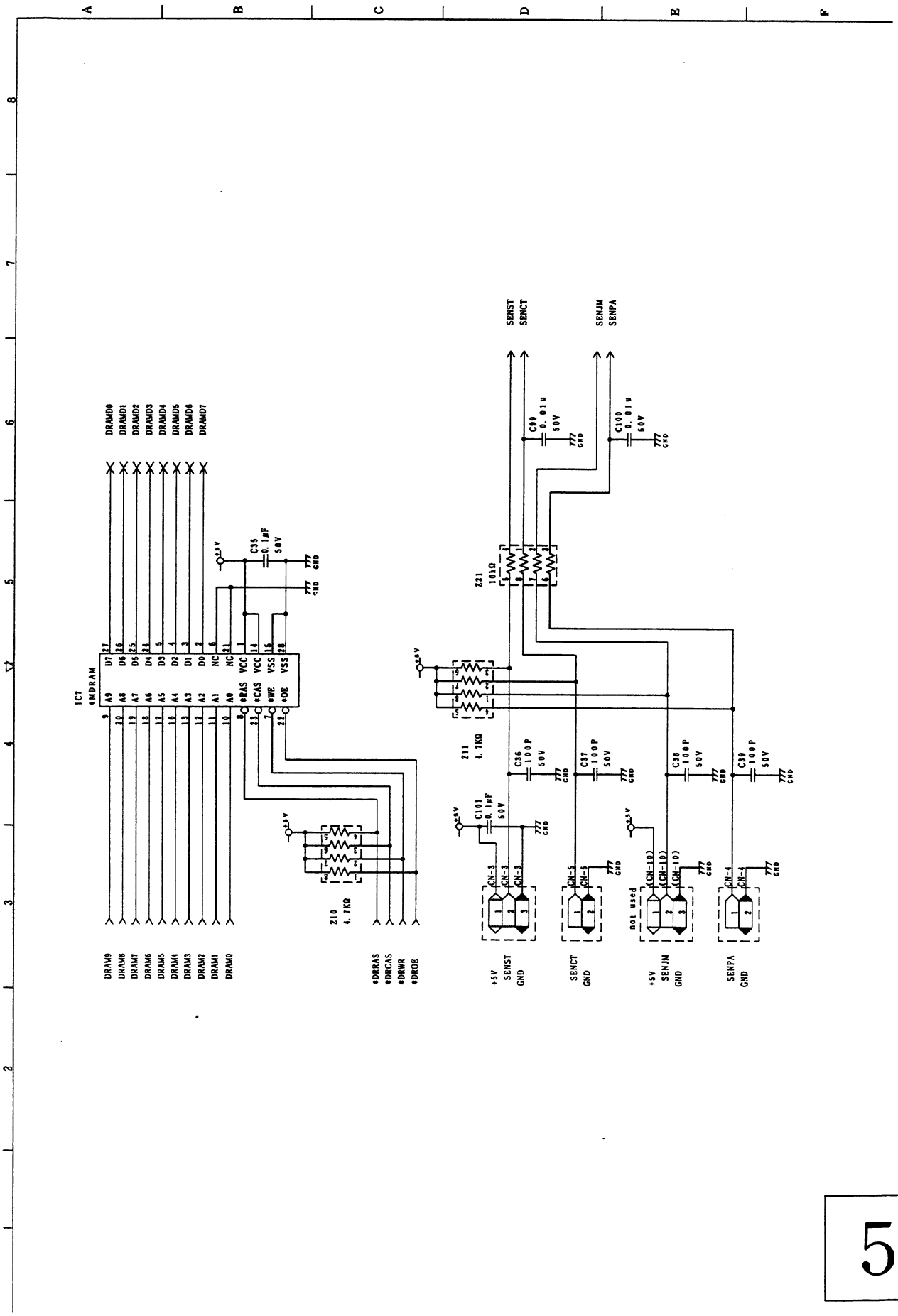
A
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C
D
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F
1
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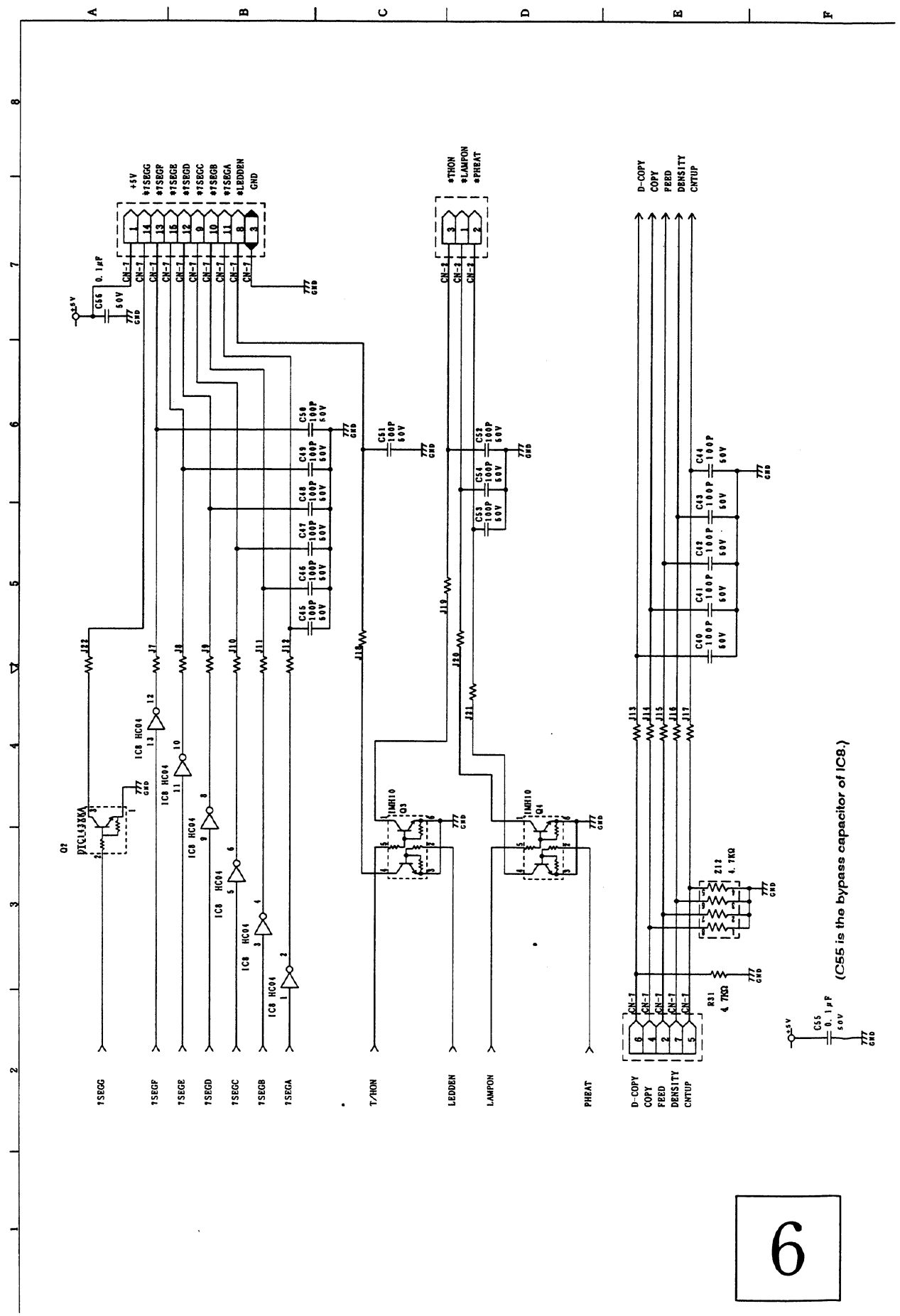
7
8
IC7
4MDRAM
DRAMD0
DRAMD1
DRAMD2
DRAMD3
DRAMD4
DRAMD5
DRAMD6
DRAMD7
D7
D6
D5
D4
D3
D2
D1
D0
NC
NC
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
*RAS
*CAS
*WE
*OE
VCC
VCC
VSS
VSS
+5V
C35
0.1μF
50V
GND
R21
10kΩ
R11
4.7kΩ
R10
4.7kΩ
C36
100P
50V
C37
100P
50V
C38
100P
50V
C39
100P
50V
C88
0.01u
50V
C100
0.01u
50V
C101
0.1μF
50V
SENST
SENCT
SENJM
SENPA
DRAM9
DRAM8
DRAM7
DRAM6
DRAM5
DRAM4
DRAM3
DRAM2
DRAM1
DRAM0
*DRRAS
*DRCAS
*DRWR
*DROE
CN-3
CN-5
CN-10
CN-4
Not used
+5V
SENST
GND
SENCT
GND
+5V
SENJM
GND
SENPA
GND

5


A
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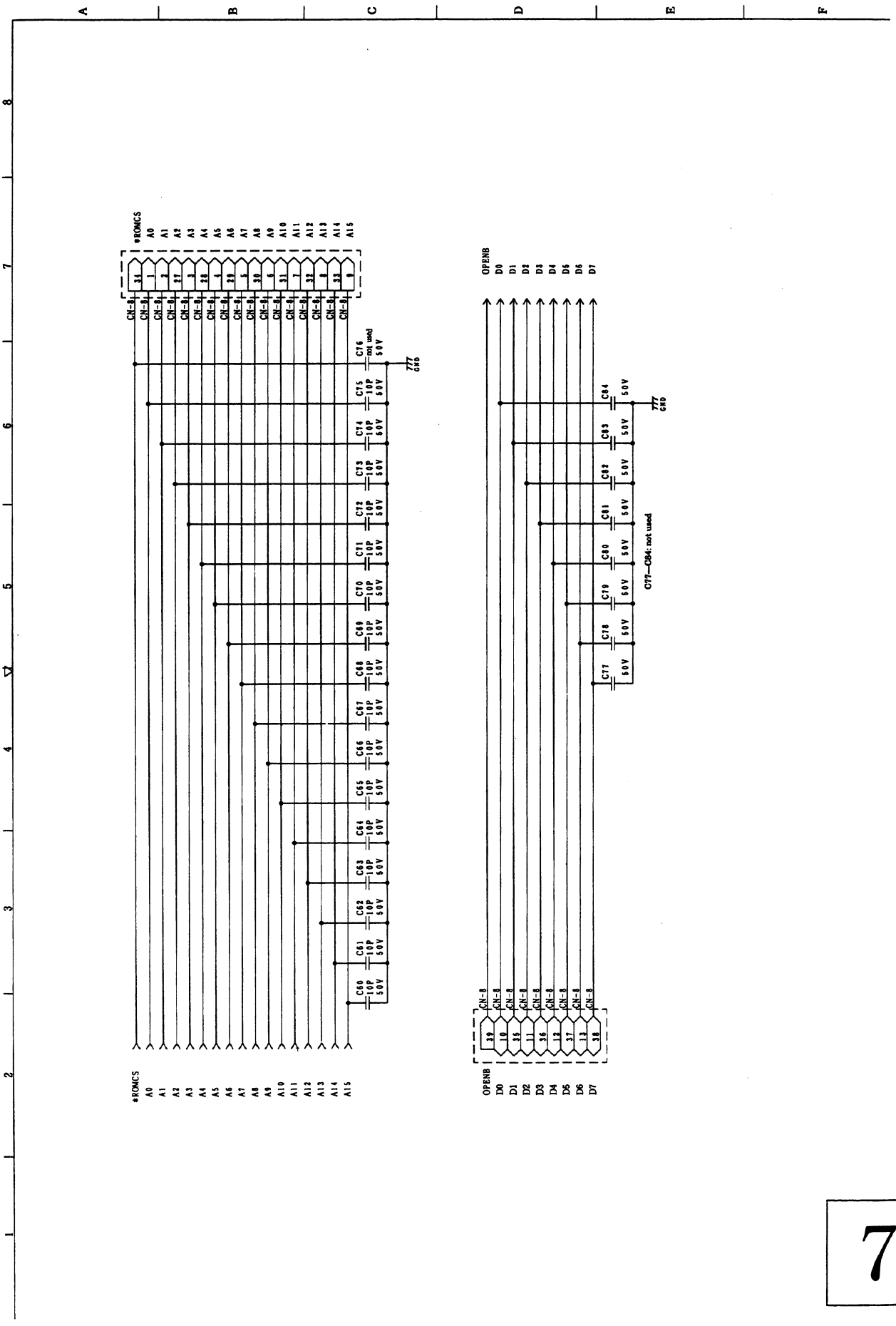
7
8
+5V
*7SEGG
*7SEGF
*7SEGE
*7SEGD
*7SEGC
*7SEGB
*7SEGA
*LEDDEN
GND
*THON
*LAMPON
*PHEAT
D-COPY
COPY
FEED
DENSITY
CNTUP
Q2
PTC13XMA
IC8 HC04
Q3
Q4
1MH10
Z12
4.7KΩ
R31
4.7KΩ
C55
0.1μF
50V
(C55 is the bypass capacitor of IC8.)
*7SEGG
*7SEGF
*7SEGE
*7SEGD
*7SEGC
*7SEGB
*7SEGA
T/HON
LEDDEN
LAMPON
PHEAT
D-COPY
COPY
FEED
DENSITY
CNTUP

6


A
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*ROMCS
A0
A1
A2
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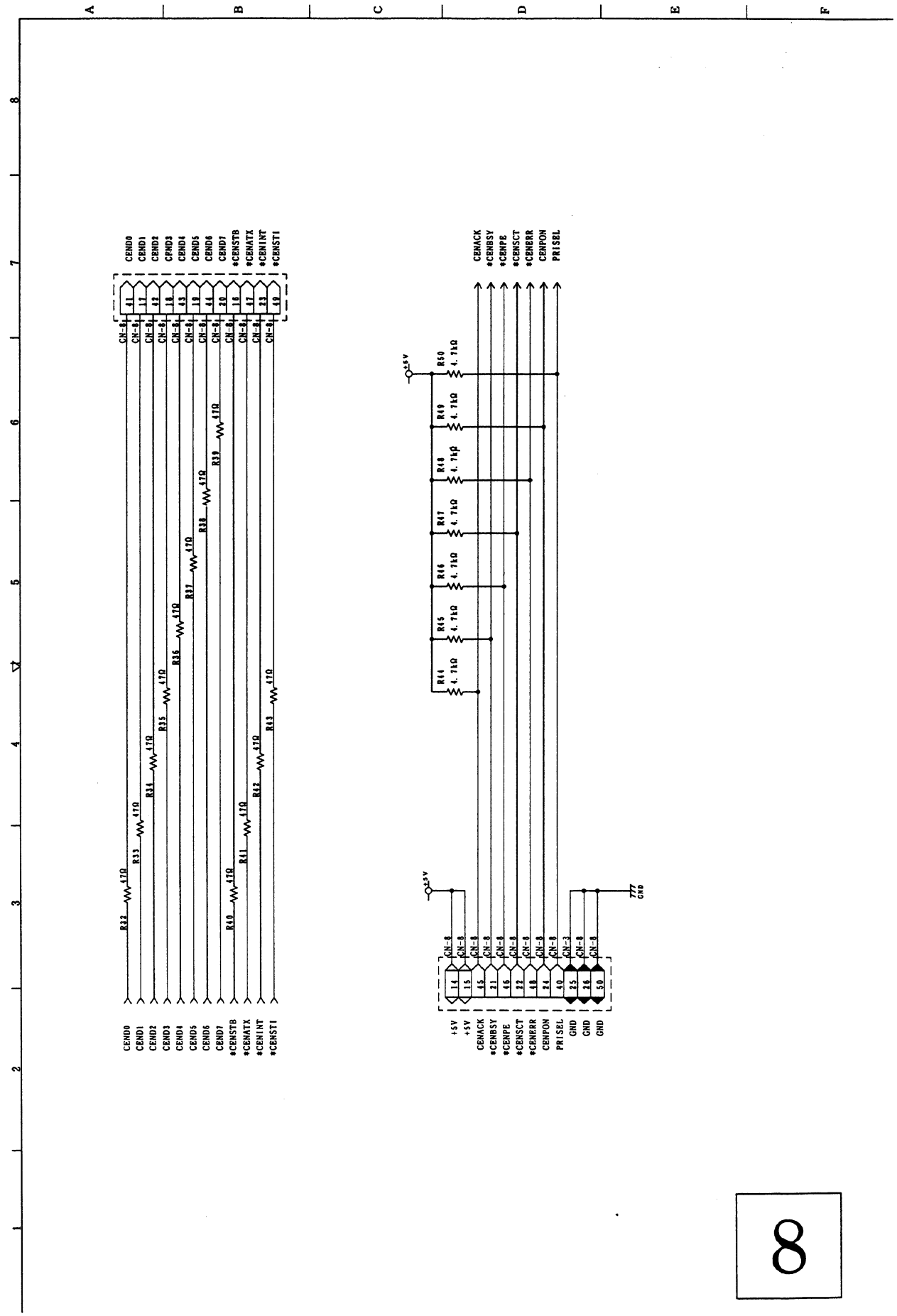
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
CN-8
C16 not used 50V
C75 10P 50V
C74 10P 50V
C73 10P 50V
C72 10P 50V
C71 10P 50V
C70 10P 50V
C69 10P 50V
C68 10P 50V
C67 10P 50V
C66 10P 50V
C65 10P 50V
C64 10P 50V
C63 10P 50V
C62 10P 50V
C61 10P 50V
C60 10P 50V
GND
OPENB
D0
D1
D2
D3
D4
D5
D6
D7
C84 50V
C83 50V
C82 50V
C81 50V
C80 50V
C79 50V
C78 50V
C77 50V
C77—C84: not used

7


A
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7
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5
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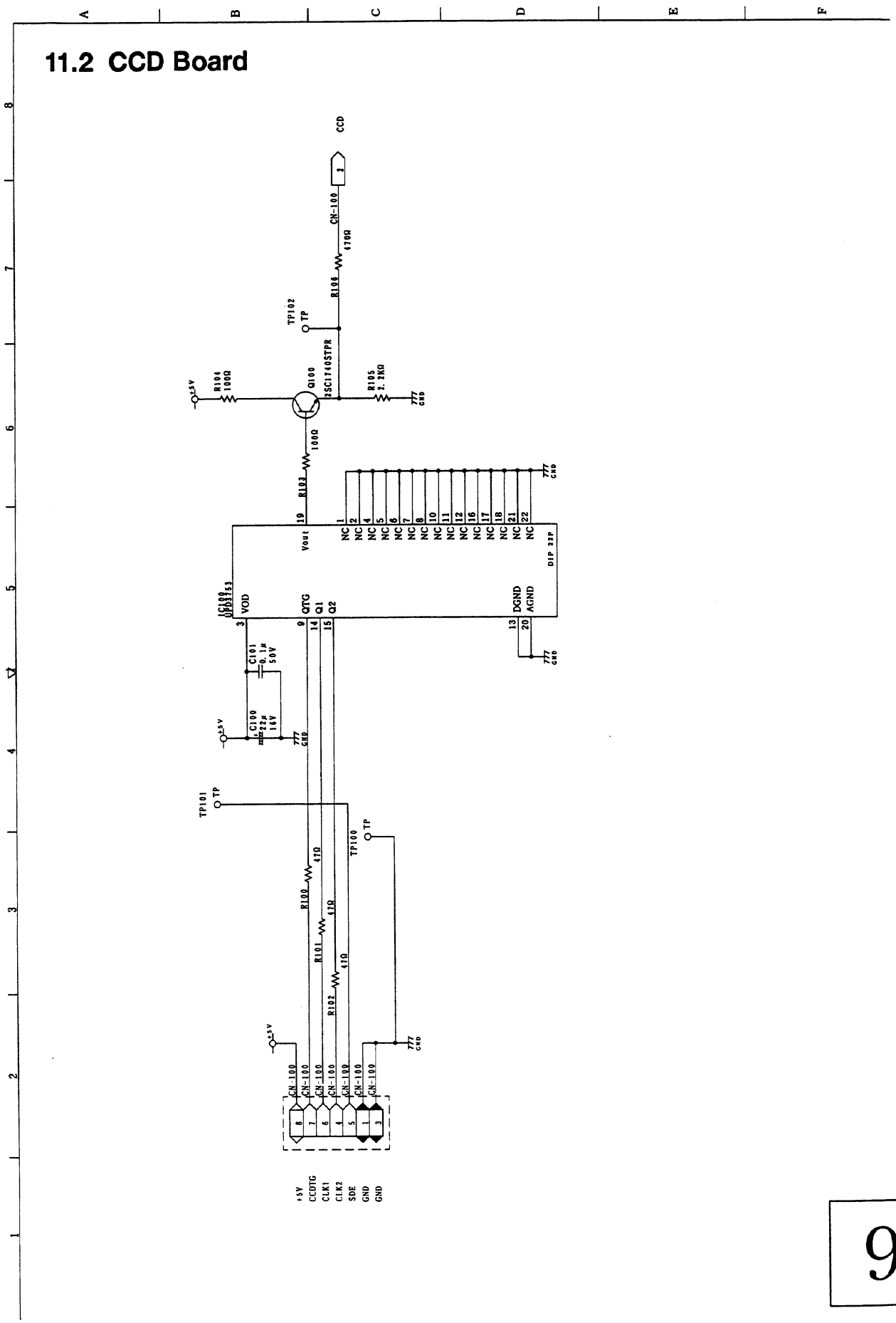
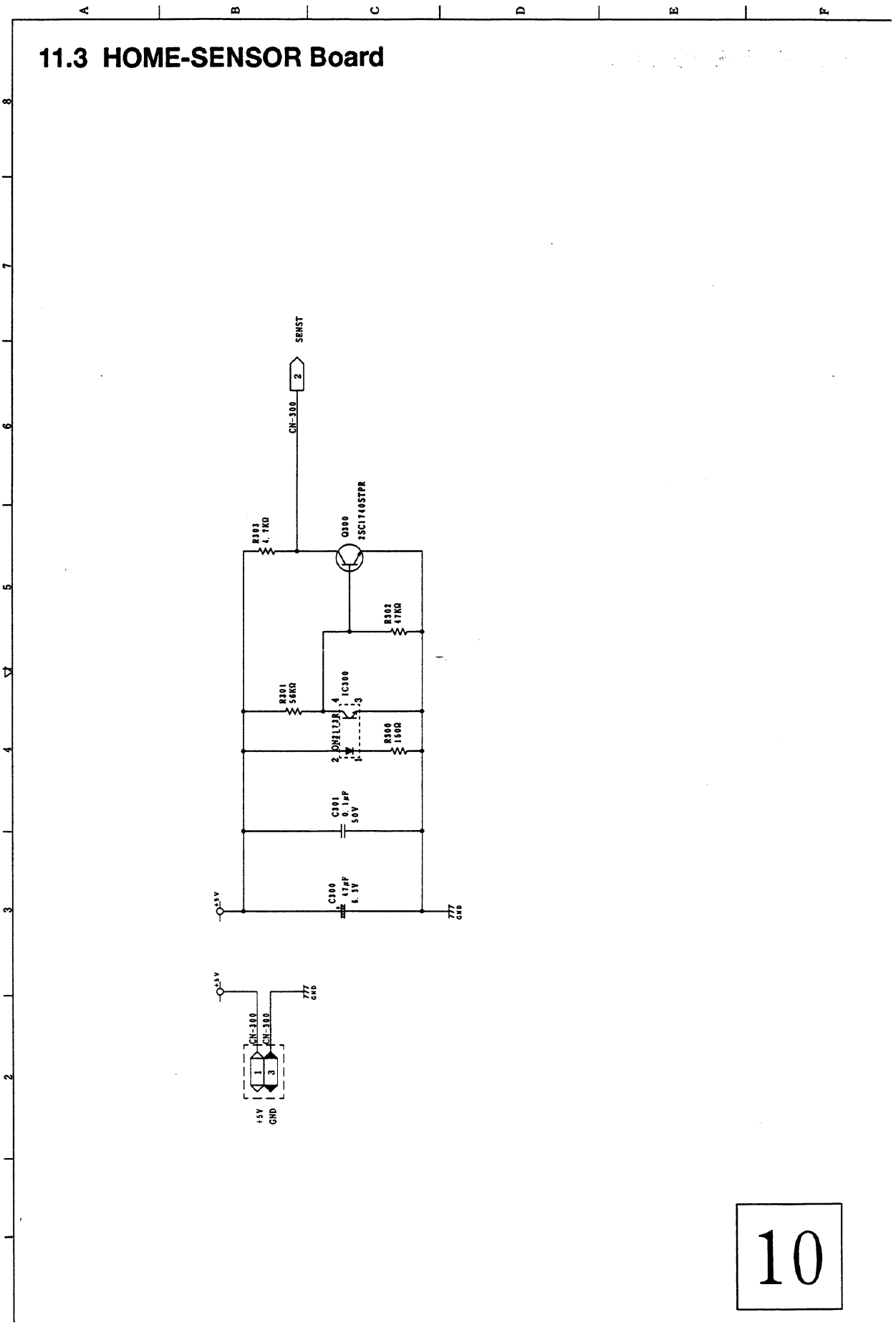
CEND0
CEND1
CEND2
CEND3
CEND4
CEND5
CEND6
CEND7
*CENSTB
*CENATX
*CENINT
*CENSTI
R32 470
R33 470
R34 470
R35 470
R36 470
R37 470
R38 470
R39 470
R40 470
R41 470
R42 470
R43 470
CN-8
CN-3
+5V
GND
R44 4.7kΩ
R45 4.7kΩ
R46 4.7kΩ
R47 4.7kΩ
R48 4.7kΩ
R49 4.7kΩ
R50 4.7kΩ
CENACK
*CENBSY
*CENPE
*CENSCT
*CENERR
CENPON
PRISEL

11.2 CCD Board



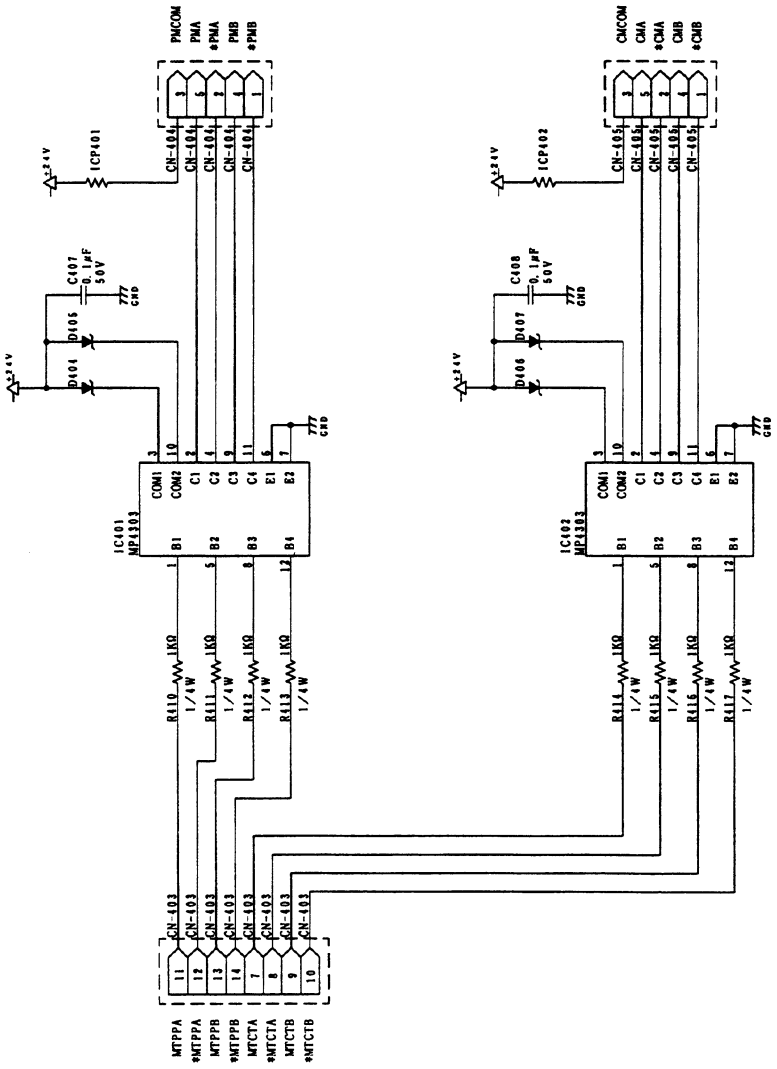
9

11.3 HOME-SENSOR Board



10

11.4 POWER Board



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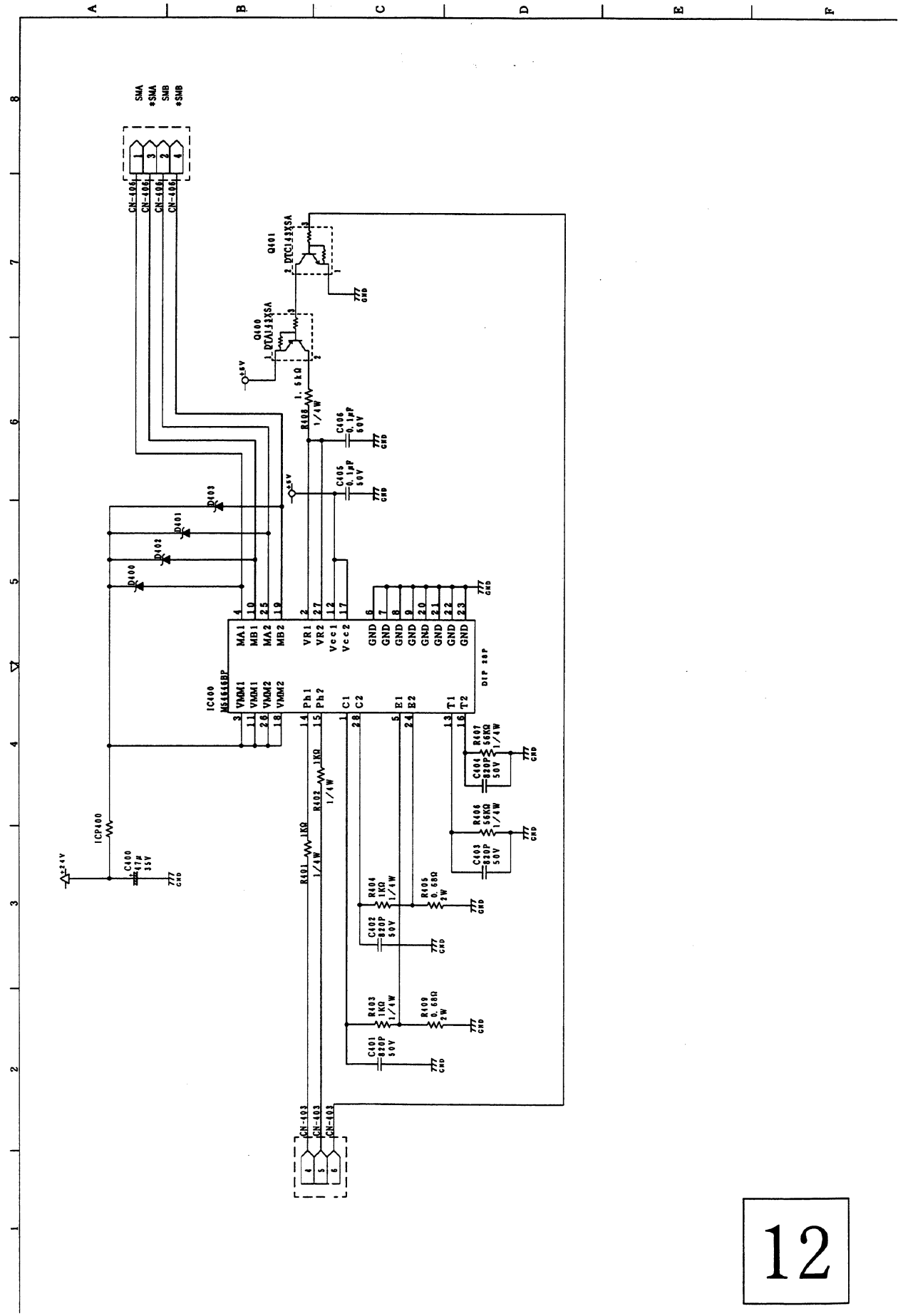
A
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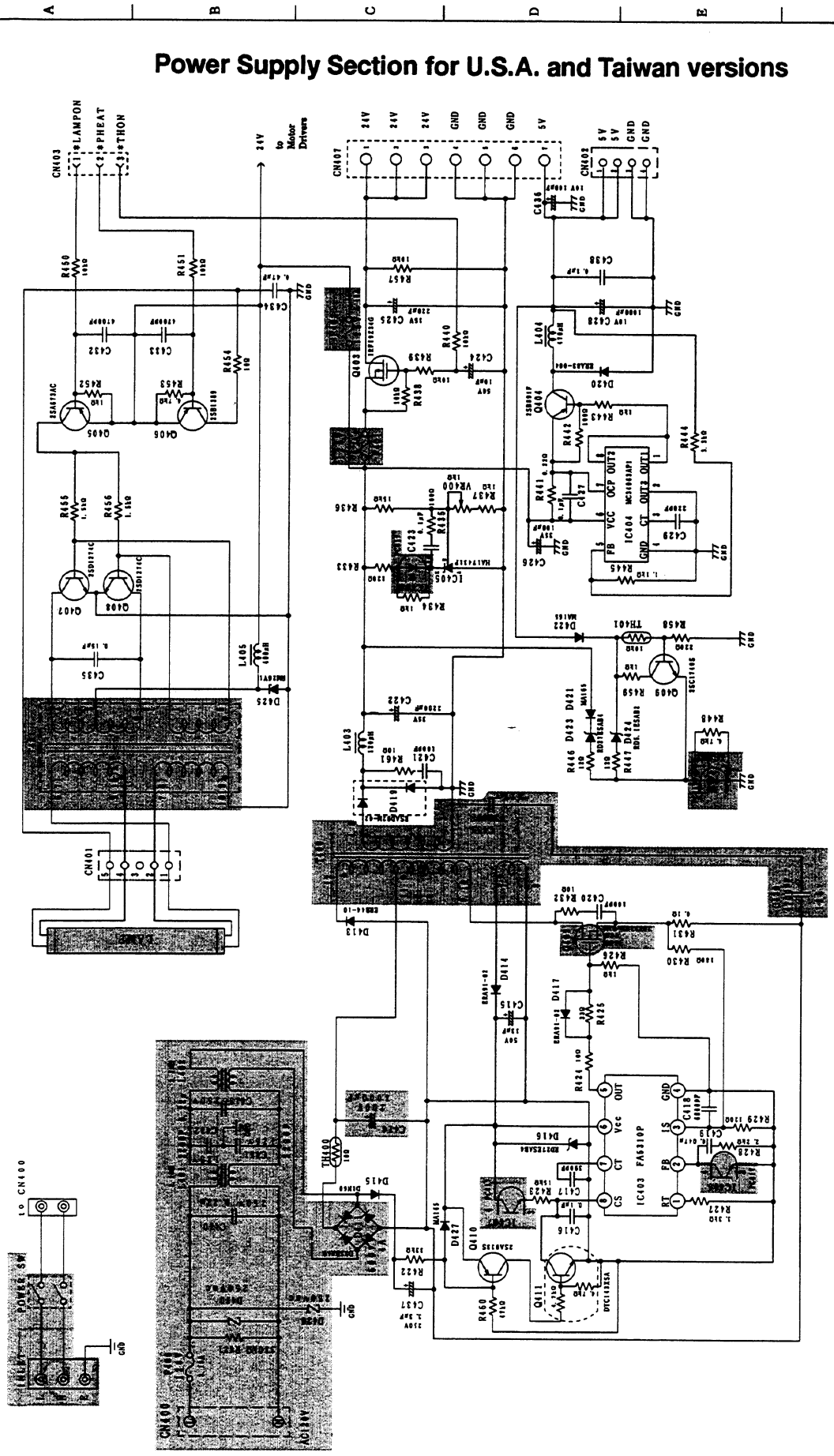
SMA
*SMA
SMB
*SMB
CN-106
CN-103
Q101
Q100
DTA133XSA
+5V
+24V
GND
1.5kΩ
1/4W
R108
C106
0.1μF
50V
C105
R103
R101
R102
1KΩ
ICP100
C100
47μ
35V
IC100
M54646FP
VM1
VM2
MA1
MB1
MA2
MB2
VR1
VR2
Vcc1
Vcc2
GND
Ph1
Ph2
C1
C2
E1
E2
T1
T2
DIP 28P
R107
56KΩ
1/4W
C104
820P
50V
R106
C103
R104
R105
0.68Ω
1W
C102
R103
R109
C101

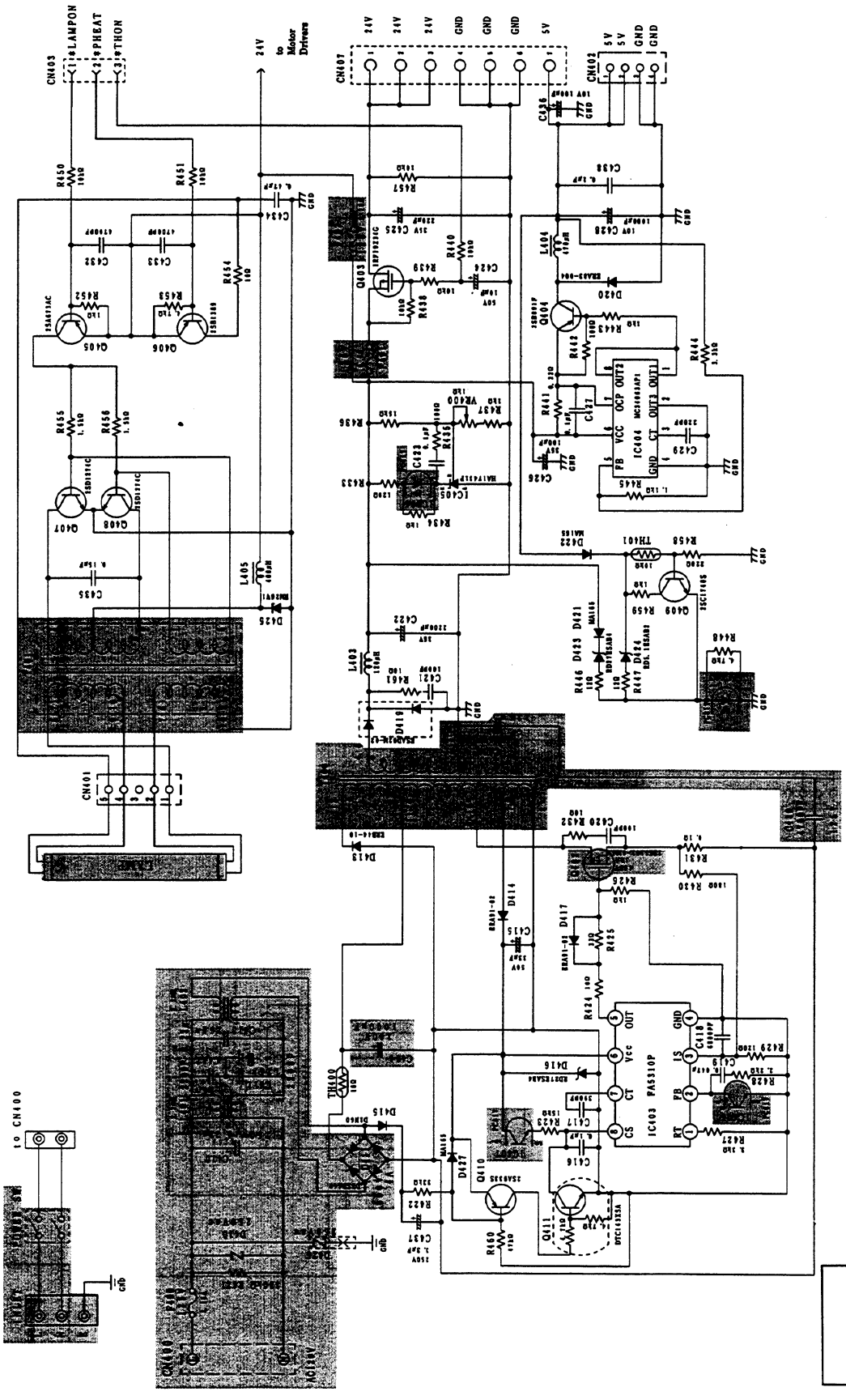
12

Power Supply Section for U.S.A. and Taiwan versions



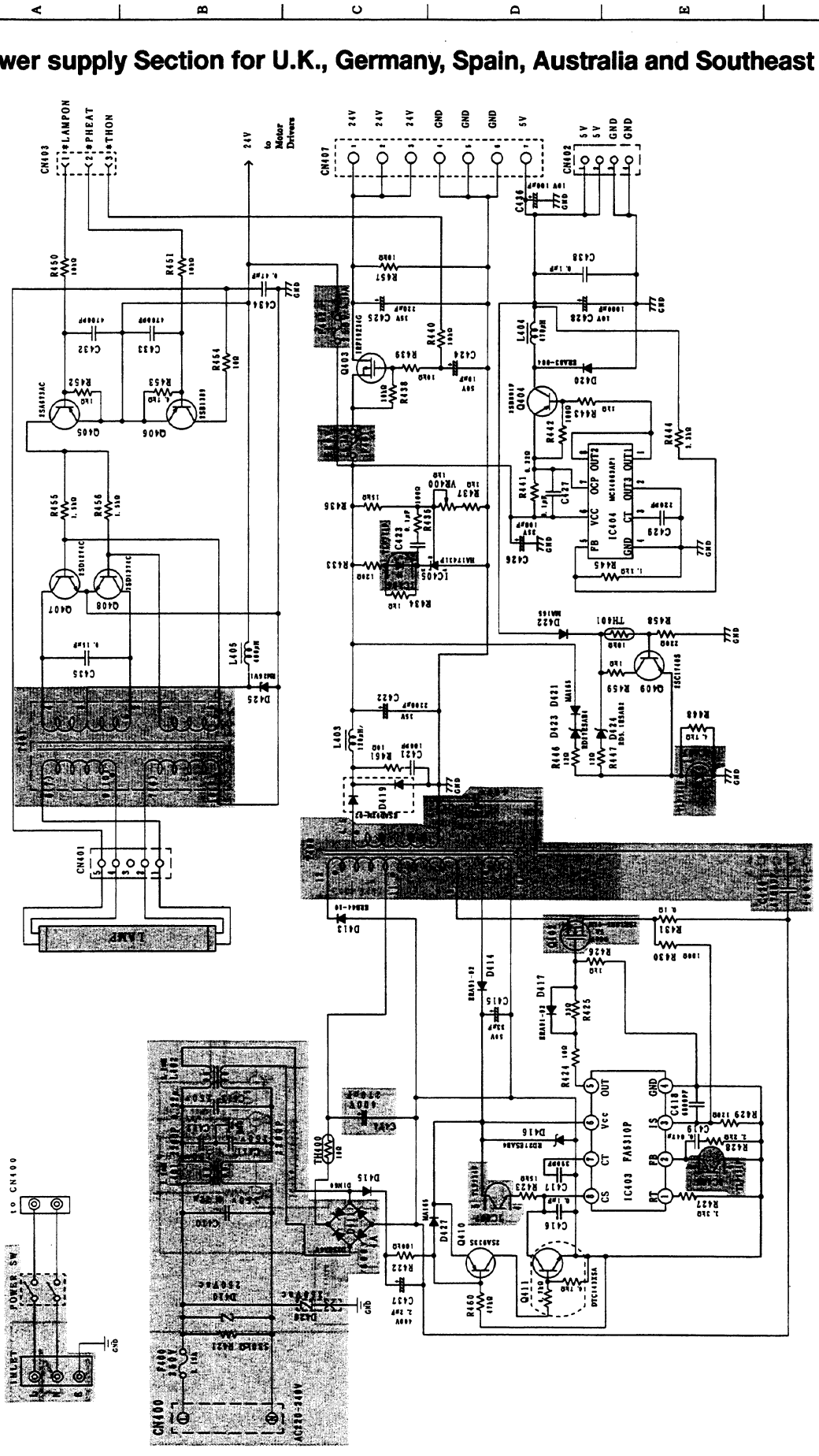
13

Power Supply Section for Canada versions



14

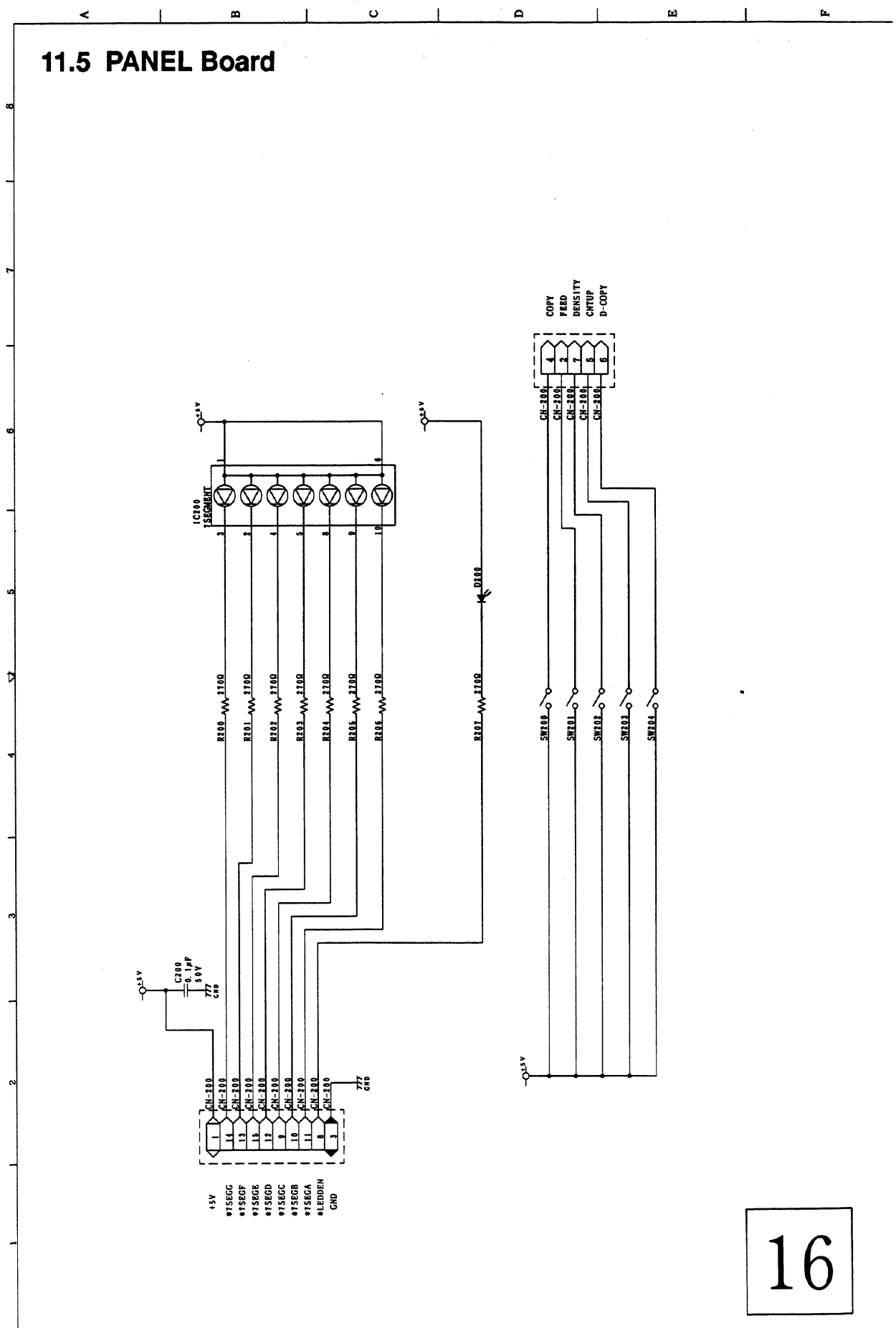
Power supply Section for U.K., Germany, Spain, Australia and Southeast Asia versions



Note: Parts in the shaded area have special characteristics important for safety.
(Equivalent to parts with ⚠ mark)

15

11.5 PANEL Board



16

SECTION 12
PARTS LOCATION AND MECHANICAL PARTS LIST

Important Safety Notice

Components identified by ⚠ mark in the Remark column have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

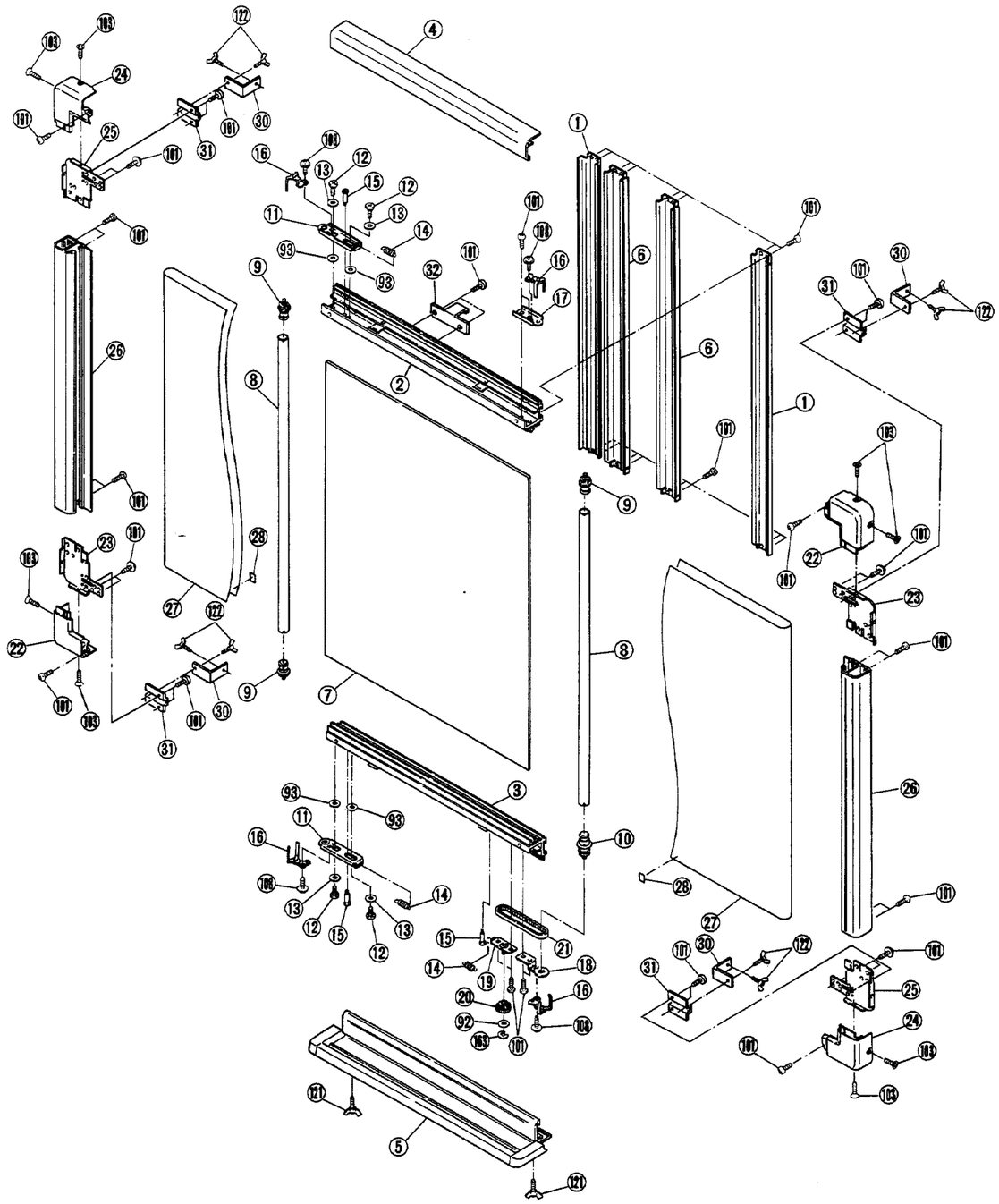
12.1 Screen 12-2
12.2 Optical Unit 12-5
12.3 Printer 12-7
12.4 Optional Stand/Wall-Mounting Kit 12-9
12.5 Packing Parts 12-11

Note: RTL (Retention Time Limited)

The marking (RTL) in the Remark column indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.
After the end of this period, the assembly will no longer be available.

12.1 Screen

12.1.1 Screen for KX-B430

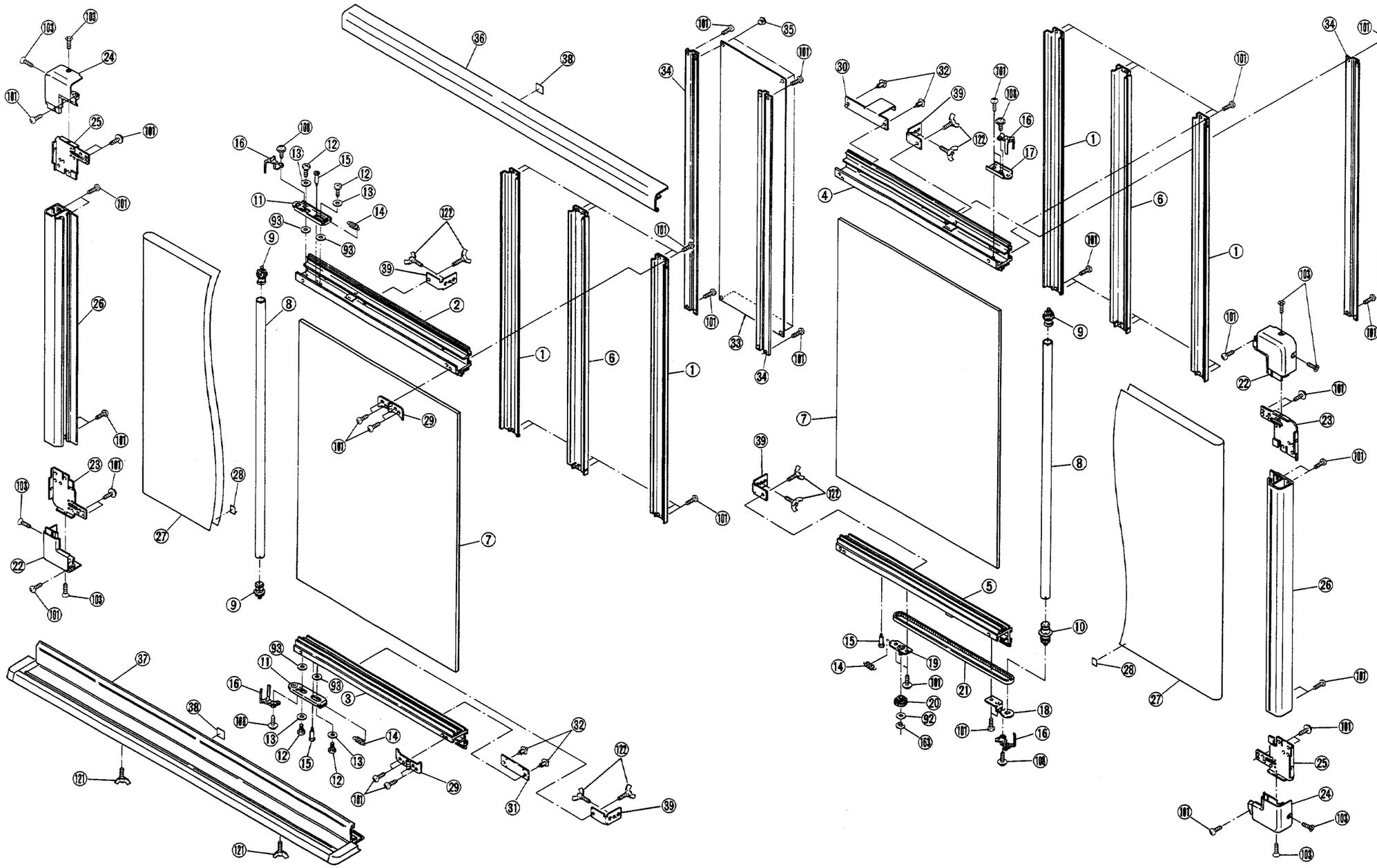


12 — 2

REPLACEMENT MECHANICAL PARTS LIST (Screen for KX-B430)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBUCA0014Z–J	Panel Frame (vertical) (assembly)	2	
2	PBUAA0068Z–J	Panel Frame (upper)	1	
3	PBUAA0069Z–J	Panel Frame (lower)	1	
4	PBGCA0009Z	Escutcheon (upper)	1	
5	PBGCA0010Z	Escutcheon (lower) with Tray	1	
6	PBUCA0012Z	Screen Tension Frame	2	
7	PBUEA0050Z	Inner Panel	1	
8	PBDR1Z52	Roller	2	
9	PBUD1Y52	Roller Gear	3	
10	PBUDA0023Z	Roller Shaft with Pulley	1	
11	PBMD47Z40	Roller Sliding Plate	2	
12	PBHD3Z40	Screw for Roller Attachment	4	
13	PBHEA0006Z	Spacer	4	
14	PBDS10Z40	Tension Spring	3	
15	PQHE5020XA	Shoulder Screw	3	
16	PBHR26Z	Screen Holder	4	
17	PBMDA0001Z52	Drive Roller Attachment	1	
18	PBMDA0173Z	Roller Adjust Plate	1	
19	PBMDA0174Z	Pulley Gear Bracket (complete)	1	
20	PBUDA0024Z	Pulley Gear	1	
21	PBDVA0003Z	Belt	1	
22	PBGCA0007Z	Corner Escutcheon A	2	
23	PBUAA0051Z	Corner Escutcheon Attachment A	2	
24	PBGCA0008Z	Corner Escutcheon B	2	
25	PBUAA0052Z	Corner Escutcheon Attachment B	2	
26	PBGCA0006Z	Escutcheon	2	
27	PBUEA49Z–J	Screen (Film) with Home Marker	1	
28	PBHS1Z52	Home Marker (Black Patch)	2	
30	PBHMA0066Z	Screen Fixing Plate	4	
31	PBMDA0237Z	Screen Fixing Plate A	4	
32	PBMDA0238Z	Screen Attachment Fitting	1	
92	RWPS6–025	Spacer	1	
93	PBNW1Z	Spacer	4	
101	XTB4+8FFY	Screw	52	
103	XTS3+8FFY	Screw (flat head)	8	
108	XTW3+6LFX	Screw	4	
121	XVP4F30FX	Thumb Screw	2	
122	XVP4F8FX	Thumb Screw	8	
163	XUC5FY	E-ring	1	

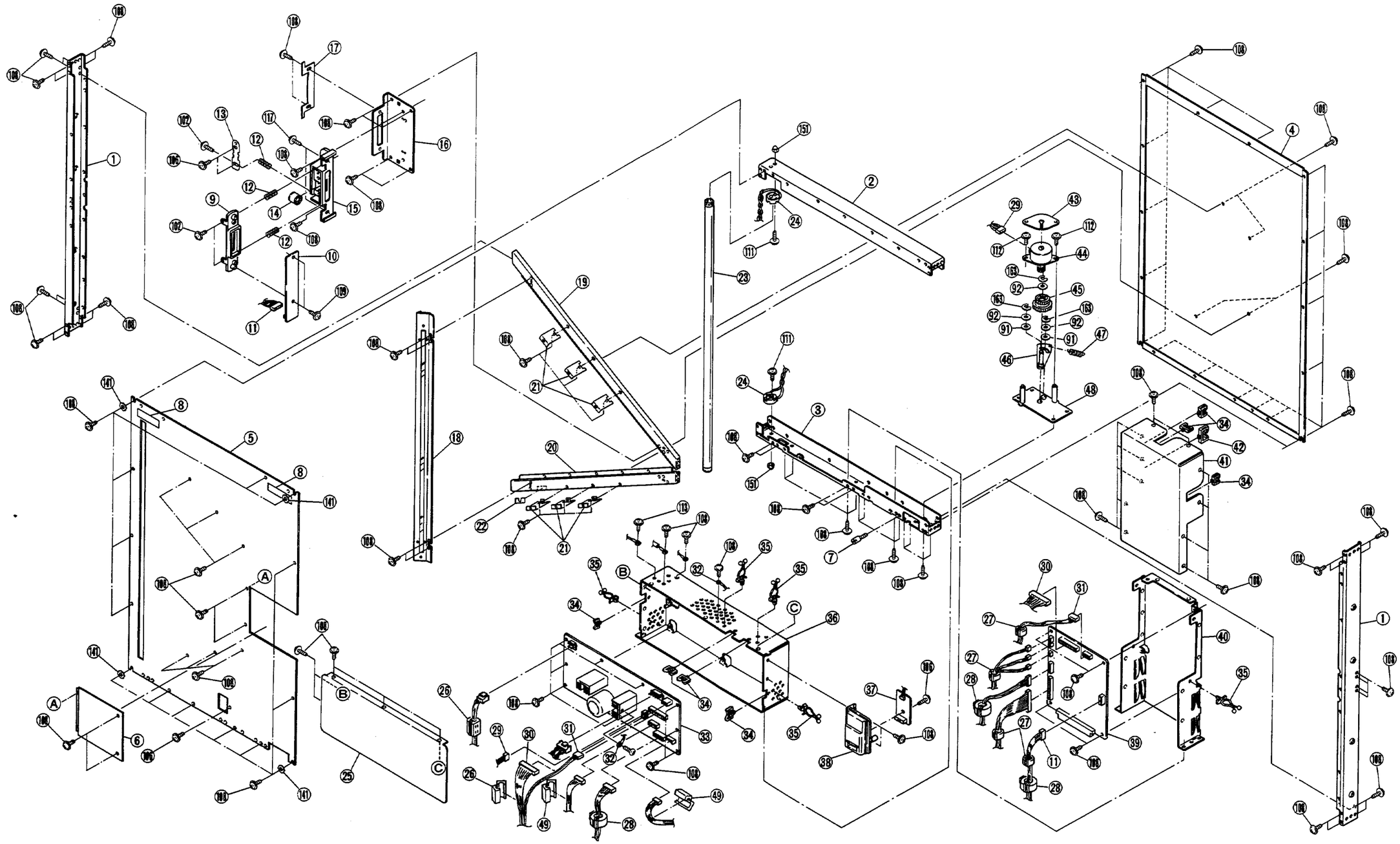
12.1.2 Screen for KX-B530/B630



REPLACEMENT MECHANICAL PARTS LIST (Screen for KX-B530/B630)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBUCA0014Z–J	Panel Frame (vertical) (assembly)	4	
2	PBUAA0058Z–J	Panel Frame (left-upper) for KX-B530	1	
	PBUAA0070Z–J	Panel Frame (left-upper) for KX-B630	1	
3	PBUAA0059Z–J	Panel Frame (left-lower) for KX-B530	1	
	PBUAA0071Z–J	Panel Frame (left-lower) for KX-B630	1	
4	PBUAA0060Z–J	Panel Frame (right-upper) for KX-B530	1	
	PBUAA0072Z–J	Panel Frame (right-upper) for KX-B630	1	
5	PBUAA0061Z–J	Panel Frame (right-lower) for KX-B530	1	
	PBUAA0073Z–J	Panel Frame (right-lower) for KX-B630	1	
6	PBUCA0012Z	Screen Tension Frame	2	
7	PBUE3X	Inner Panel for KX-B530	2	
	PBUEA0051Z	Inner Panel for KX-B630	2	
8	PBDR1Z52	Roller	2	
9	PBUD1Y52	Roller Gear	3	
10	PBUDA0023Z	Roller Shaft with Pulley	1	
11	PBMD47Z40	Roller Sliding Plate	2	
12	PBHD3Z40	Screw for Roller Attachment	4	
13	PBHEA0006Z	Spacer	4	
14	PBDS10Z40	Tension Spring	3	
15	PQHE5020XA	Shoulder Screw	3	
16	PBHR26Z	Screen Holder	4	
17	PBMDA0001Z52	Drive Roller Attachment	1	
18	PBMDA0173Z	Roller Adjust Plate	1	
19	PBMDA0174Z	Pulley Gear Bracket (complete)	1	
20	PBUDA0024Z	Pulley Gear	1	
21	PBDVA0002Z	Belt for KX-B530	1	
	PBDVA0004Z	Belt for KX-B630	1	
22	PBGCA0007Z	Corner Escutcheon A	2	
23	PBUAA0051Z	Corner Escutcheon Attachment A	2	
24	PBGCA0008Z	Corner Escutcheon B	2	
25	PBUAA0052Z	Corner Escutcheon Attachment B	2	
26	PBGCA0006Z	Escutcheon (vertical)	2	
27	PBUE2Z–J	Screen (Film) with Home Marker for KX-B530	1	
	PBUEA32Z–J	Screen (Film) with Home Marker for KX-B630	1	
28	PBHS1Z52	Home Marker (Black Patch)	2	
29	PBBHA0001Z	Hinge	2	
30	PBHMA0048Z	Panel Slide Plate (upper)	1	
31	PBHMA0049Z	Panel Slide Plate (lower)	1	
32	NF–2F19	Rivet	4	
33	PBKUA0002Z–J	Rear Cover	2	
34	PBHMA0051Z	Rear Plate	4	
35	NPR–504	Nylon Rivet	8	
36	PBGCA0004Z	Escutcheon (upper) for KX-B530	1	
	PBGCA0011Z	Escutcheon (upper) for KX-B630	1	
37	PBGCA0005Z	Escutcheon (lower) with Tray for KX-B530	1	
	PBGCA0012Z	Escutcheon (lower) with Tray for KX-B630	1	
38	PBHGA0020Z	Rubber	2	
39	PBHMA0055Z	Screen Fixing Plate	4	
92	RWPS6–025	Spacer	1	
93	PBNW1Z	Spacer	4	
101	XTB4+8FFY	Screw	66	
103	XTS3+8FFY	Screw (flat head)	8	
108	XTW3+6LFX	Screw	4	
121	XVP4F30FX	Thumb Screw	2	
122	XVP4F8FX	Thumb Screw	8	
163	XUC5FY	E-ring	1	

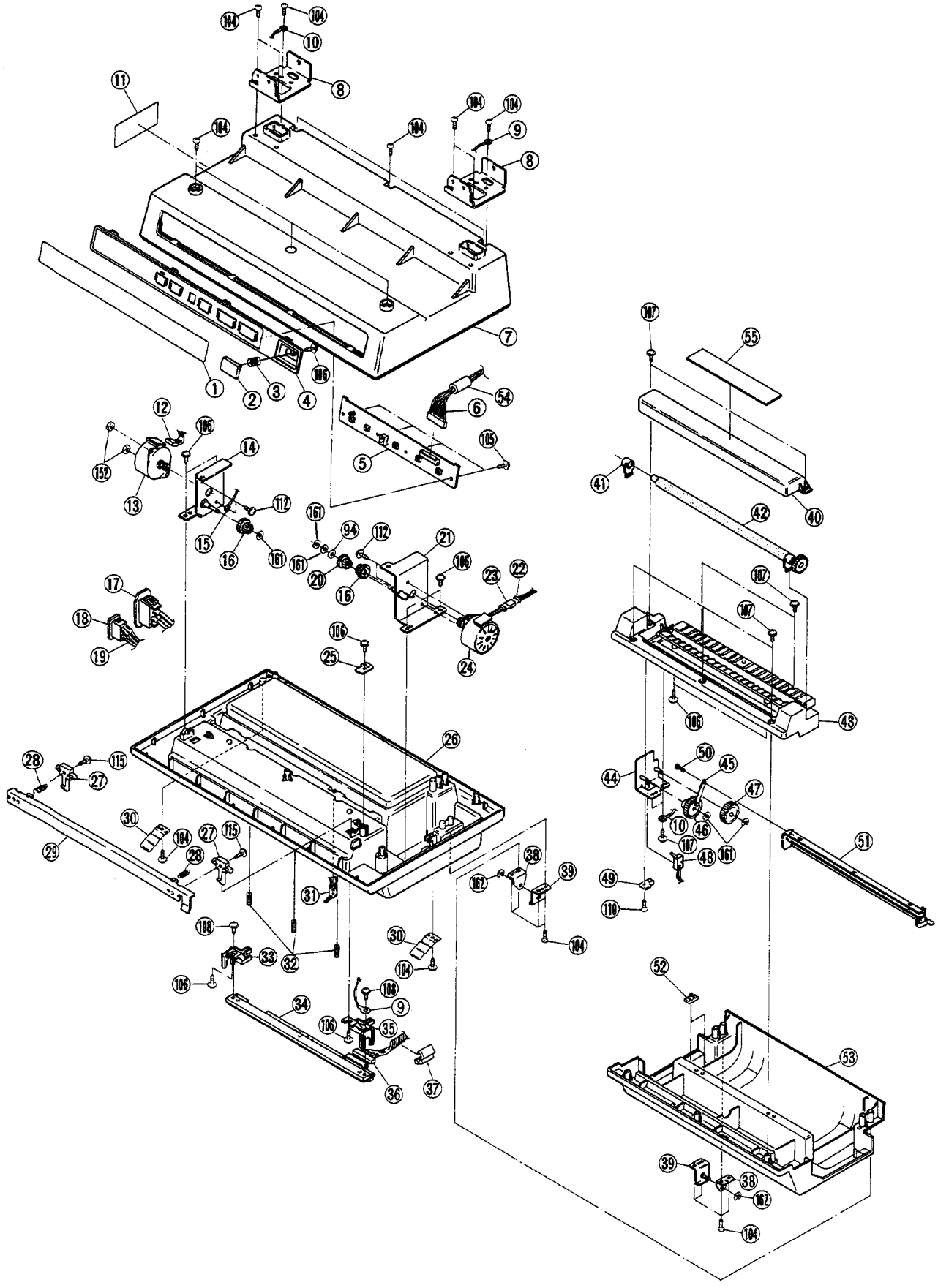
12.2 Optical Unit



REPLACEMENT MECHANICAL PARTS LIST (Optical Unit)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBUAA0062Z	Optical Unit Side Frame	2	
2	PBUAA0053Z	Optical Unit Top Frame	1	
3	PBUAA0054Z	Optical Unit Bottom Frame	1	
4	PBUVA0017Z-J	Optical Unit Rear Cover	1	
5	PBUVA0016Z	Optical Unit Cover	1	
6	PBUVA0020Z	CCD Cover	1	
7	PBHMA0066Z	Pin	1	
8	PBQAA0407	Caution Label for Service Personnel	2	
9	PBHAA0023Z	CCD Holder	1	
10	PBAPX147B530	CCD Board	1	(RTL)
11	PBJEA0224Z	CCD Harness	1	
12	PBDSA0047Y	CCD Adjustment Spring	3	
13	PBUSA0013Z	Lens Spring	1	
14	PBMEA0020Z	Lens	1	
15	PBHAA0022Z	Lens Base	1	
16	PBUAA0055Z	CCD Base	1	
17	PBMZA0020Z	Aperture Adjustment Plate	1	
18	PBUE1Z-J	Mirror (complete)	1	
19	PBUAA0056Z	Support Frame (upper)	1	
20	PBUAA0057Z	Support Frame (lower)	1	
21	PBHMA0068Z	Cover Support-fitting	6	
22	K-104G	Harness Hook	1	
23	PBFL35SS-D	Fluorescent Lamp	1	⚠
24	PBJEA0232Z	Fluorescent Lamp Harness with Socket	1	
25	PBMCA0040Z	POWER Board Cover	1	
26	SFC-8	Sleeve Ferrite Clamp	2	
27	KR06TT161208	Core	4	
28	TFC-251512	Toroidal Ferrite Clamp	3	
29	PBJEA0233Z	Screen Motor Harness	1	
30	PBJEA0230Z	Power-Control Harness	1	
31	PBJEA0223Z	Control-Power Harness	1	
32	PBJEA0290Z	Heat Sink Ground Harness	1	
33	PBAPX148B530	POWER Board (Ass'y) for U.S.A. and Taiwan	1	(RTL)
	PBAPX148B53C	POWER Board (Ass'y) for Canada	1	(RTL)
	PBAPX167B53U	POWER Board (Ass'y) for U.K., Germany, Spain, Australia and SE Asia	1	(RTL)
34	EDS-1208U	Harness Clamp	7	
35	TMM7464	Harness Clamp	5	
36	PBMDA0179Z	POWER Board Bracket	1	
37	PBAPX153B530	HOME-SENSOR Board	1	(RTL)
38	PBHRA0078Z	Home Sensor Holder	1	
39	PBAPX146B530	CONTROL Board	1	(RTL)
40	PBMDA0178Z	CONTROL Board Bracket	1	
41	PBMCA0041Z	CONTROL Board Cover	1	
42	EDS-1717U	Harness Clamp	1	
43	PBMMA0008Z	Screen Motor Bracket	1	
44	PBAMA0005Z	Screen Motor	1	
45	PBDGA0028Z	Intermediate Gear	1	
46	PBMDX0175Z	Planetary Gear Bracket (complete)	1	
47	PBDSA0048Z	Planetary Spring	1	
48	PBUCA0020Z	Planetary Gear Base (complete)	1	
49	SFC-6	Sleeve Ferrite Clamp	2	
91	RWPS6-013	Spacer	2	
92	RWPS6-025	Spacer	3	
102	XTP3+20FX	Screw (CCD Adjustment)	3	
106	XTW3+10PFX	Screw	4	
108	XTW3+6LFX	Screw	135	
109	XTW3+8PFX	Screw	2	
111	XYN3+J14FXS	Screw with Washer	2	
112	XYN3+J6FX	Screw with Washer	2	
113	XYN4+F6FXS	Screw	1	
117	XTP3+10FX	Screw	2	
141	XWC3B	Star Washer	4	
151	XNA3FX	Cap Nut	2	
163	XUC5FY	E-ring	3	

12.3 Printer

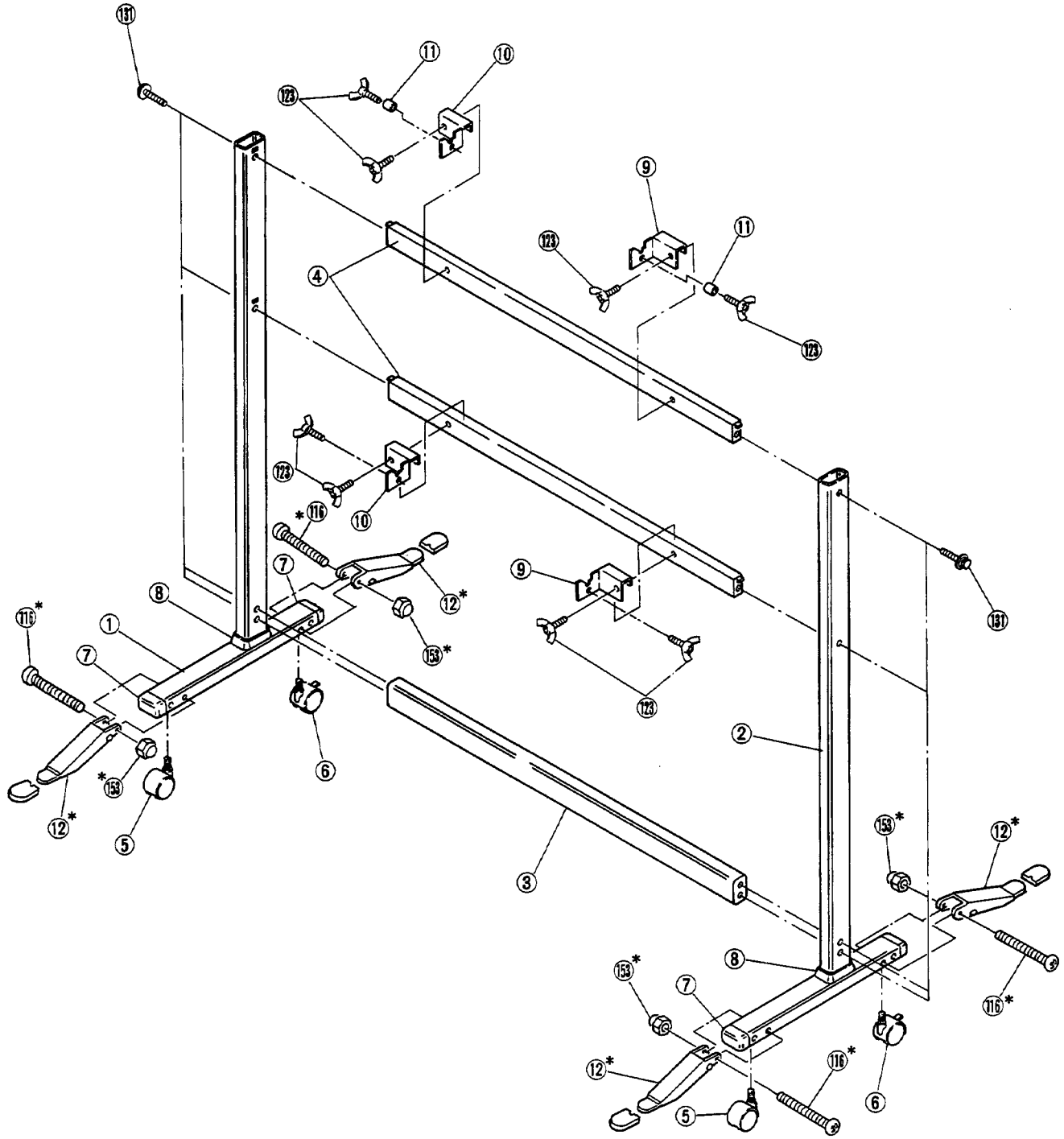


REPLACEMENT MECHANICAL PARTS LIST (Printer part)

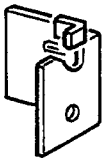
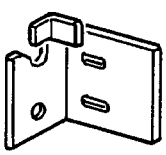
Ref. No.	Part No.	Description	Q'ty	Remark
1	PBGPA0044Z	Control Panel Sheet for KX-B430	1	
	PBGPA0043Z	Control Panel Sheet for KX-B530	1	
	PBGPA0045Z	Control Panel Sheet for KX-B630	1	
2	PBBCA0006Z	OPEN Button	1	
3	PBDSA0049Z	Spring	1	
4	PBKEA0038Z	Panel Bracket	1	
5	PBAPX152B530	PANEL Board	1	(RTL)
6	PBJEA0226Z	Panel Harness	1	
7	PBKMA0022Z	Printer Upper Cover	1	
8	PBMDA0177Z	Printer Attachment	2	
9	PBJEA0291Z-J	Thermal Head Ground Harness	1	
10	PBJEA0292Z-J	Ground Harness	1	
11	PBGTA0176Z	Name Plate for KX-B430	1	
	PBGTA0193Z	Name Plate for KX-B430C	1	
	PBGTA0184Z	Name Plate for KX-B430U	1	
	PBGTA0182Z	Name Plate for KX-B430G	1	
	PBGTA0212Z	Name Plate for KX-B430SP	1	
	PBGTA0209Z	Name Plate for KX-B430A	1	
	PBGTA0205Z	Name Plate for KX-B430T	1	
	PBGTA0234Z	Name Plate for KX-B430GJ	1	
	PBGTA0172Z	Name Plate for KX-B530	1	
	PBGTA0192Z	Name Plate for KX-B530C	1	
	PBGTA0180Z	Name Plate for KX-B530U	1	
	PBGTA0181Z	Name Plate for KX-B530G	1	
	PBGTA0210Z	Name Plate for KX-B530SP	1	
	PBGTA0207Z	Name Plate for KX-B530A	1	
	PBGTA0204Z	Name Plate for KX-B530T	1	
	PBGTA0232Z	Name Plate for KX-B530GJ	1	
	PBGTA0177Z	Name Plate for KX-B630	1	
	PBGTA0194Z	Name Plate for KX-B630C	1	
	PBGTA0185Z	Name Plate for KX-B630U	1	
	PBGTA0183Z	Name Plate for KX-B630G	1	
	PBGTA0211Z	Name Plate for KX-B630SP	1	
	PBGTA0208Z	Name Plate for KX-B630A	1	
	PBGTA0206Z	Name Plate for KX-B630T	1	
	PBGTA0233Z	Name Plate for KX-B630GJ	1	
12	PBJEA0301Z	Cutter Motor Harness	1	
13	PBAMA0008Z	Cutter Motor	1	
14	PBMMA0007Z	Cutter Motor Bracket (complete)	1	
15	PBJEA0299Z	Cutter Motor Ground Harness	1	
16	PBUDA0026Z	Platen Intermediate Gear	2	
17	PBJEA0234Z	AC Inlet with Harness	1	⚠
18	SJW2F4A07BB2	Power Switch	1	⚠
19	PBJEA0231Z	Power Switch Harness	1	
20	PBUDA0022Z	Reduction Gear	1	
21	PBMMA0006Z	Printer Motor Bracket (complete)	1	
22	PBJEA0300Z	Printer Motor Harness	1	
23	B6B-XH-TW	Connector	1	

Ref. No.	Part No.	Description	Q'ty	Remark
24	PBAMA0003Z	Printer Motor	1	
25	PBUEA0037Z	OPEN Hook Support Fitting	1	
26	PBKMA0023Z	Printer Base	1	
27	PBHRA0079Z	OPEN Hook	2	
28	PBDSA0050Z	OPEN Hook Spring	2	
29	PBUEA0036Z	OPEN Hook Attachment	1	
30	PBDSA0053Z	OPEN Stopper Spring	2	
31	PBJEA0228Z	Paper Empty Sensor with Harness	1	
32	PBDSA0045Z	Head Spring	3	
33	PBHRA0081Z	Thermal Head Holder (left)	1	
34	PBEZA0001Z	Thermal Head	1	
35	PBHRA0082Z	Thermal Head Holder (right)	1	
36	PBJEA0225Z-J	Thermal Head Harness (assembly)	1	
37	SFC-6	Sleeve Ferrite Clamp	1	
38	PBUEA0042Z	OPEN Fitting B	2	
39	PBUEA0041Z	OPEN Fitting A (complete)	2	
40	PBHRA0085Z	Cutter Cover	1	
41	PQDJ10001Y	Platen Bearing	1	
42	PQDN10023Z-J	Platen	1	
43	PBDEA0039Z	Conveyor	1	
44	PBMDA0180Z	Cutter Gear Bracket (complete)	1	
45	PBUEA0038Z	Cutter Joint	1	
46	PBUDA0027Z-J	Cutter Gear (complete)	1	
47	PBUDA0028Z	Cutter Intermediate Gear	1	
48	PBJEA0229Z	Cutter Home Sensor with Harness	1	
49	PBHRA0096Z	Cutter Home Sensor Holder	1	
50	P2032	Nylon Rivet	1	
51	PQDX10013W	Cutter	1	
52	MN-3	Lead Wire Clamp	2	
53	PBKEA0037Z-J	Printer Lower Cover for U.S.A. and Canada	1	
	PBKEA37Z-J1	Printer Lower Cover for U.K., Germany, Spain, Australia, SE Asia and Taiwan	1	
54	RI-16-28-9-M	Core	1	
55	PBQAA0356Z	Caution Label	1	
94	RWPS3-05	Spacer	1	
104	XTV3+14GFX	Screw	22	
105	XTV3+8GFZ	Screw	4	
106	XTW3+10PFX	Screw	10	
107	XTW3+12PFX	Screw	9	
108	XTW3+6LFX	Screw	2	
110	XYN2+F6FX	Screw	1	
112	XYN3+J6FX	Screw with Washer	4	
115	XTW3+8LFX	Screw	2	
152	XNG3BFX	Nut	2	
161	XUC2FY	E-ring	5	
162	XUC4FY	E-ring	2	

12.4 Optional Stand/Wall-Mounting Kit



Wall-Mounting Kit

(201)  ×2	(202)  ×2	(203) [M5×12mm] ×2	(204) [M4×16mm] ×4

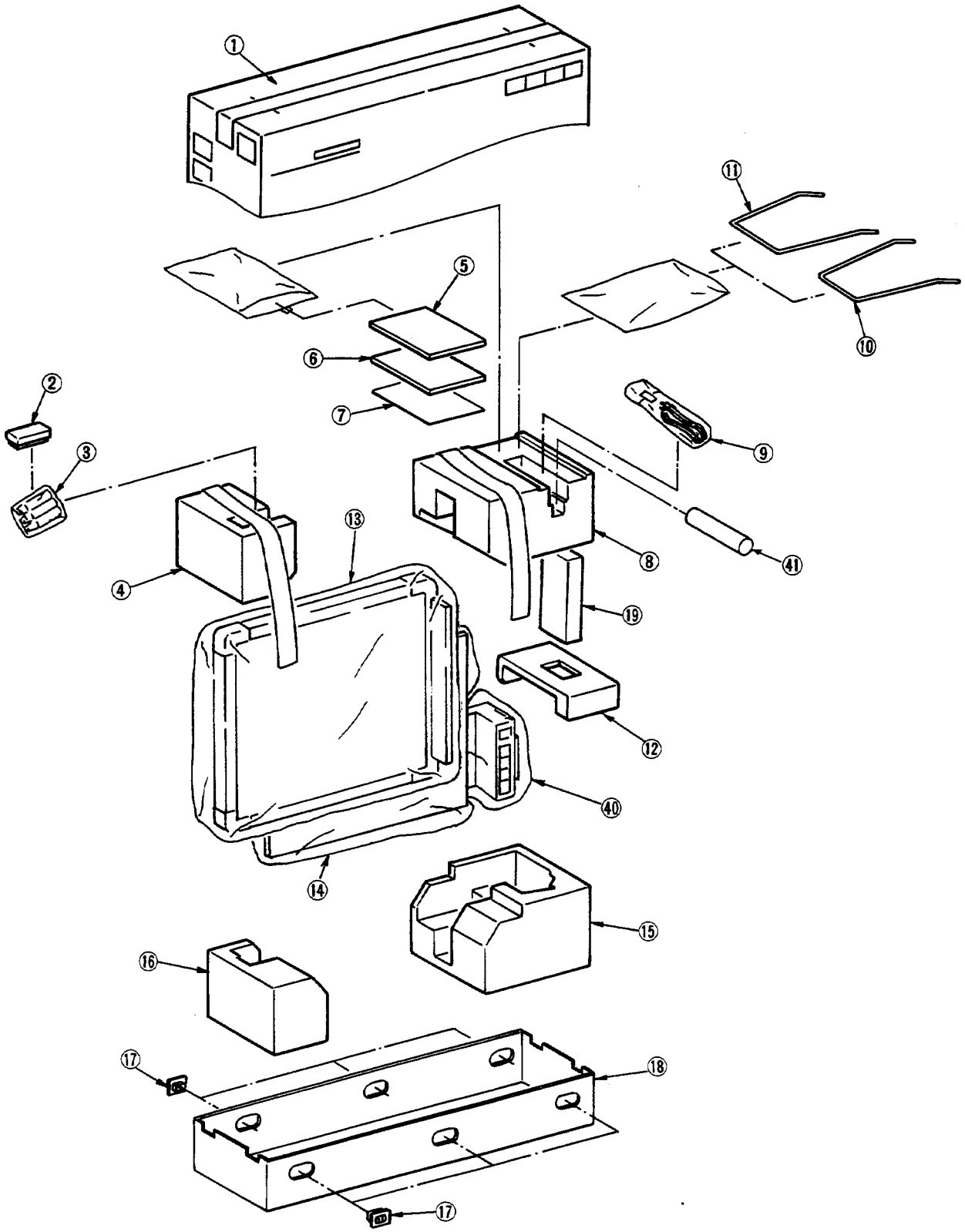
REPLACEMENT MECHANICAL PARTS LIST (Optional Stand / Wall-Mounting Kit)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBKLA0018Z	Stand Base (left) complete	1	
2	PBKLA0019Z	Stand Base (right) complete	1	
3	PBKLA0022Z	Side Bar (A) complete for KX-B430	1	
	PBKLA0007Z	Side Bar (A) complete for KX-B530/B630	1	
4	PBKLA0023Z	Side Bar (B) complete for KX-B430	2	
	PBKLA0011Z	Side Bar (B) complete for KX-B530/B630	2	
5	CT-200BK	Caster	2	
6	CT-S200NK	Caster with lock	2	
7	PBHRA0087Z	Tip Cover	4	
8	PBHRA0089Z	Prop Cover	2	
9	PBMDA0218Z	Fixture (right)	2	
10	PBMDA0219Z	Fixture (left)	2	
11	MWSP5-50	Spacer	2	
* 12	PBKLA0009Z	Support Stand	4	KX-B061/B062 only
* 116	XSN6+60FY	Screw (M6 x 60 mm)	4	KX-B061/B062 only
123	XVP5F12FX	Thumb Screw (M5 x 12 mm)	8	
131	XVG8BF40FY	Bolt with Washer (M8 x 40 mm)	8	
* 153	XNA6DFY	Cap Nat	4	KX-B061/B062 only
201	PBHMA0052Z	Wall-mounting Fixture L	2	
202	PBHMA0053Z	Wall-mounting Fixture R	2	
203	XVP5F12FX	Thumb Screw (M5 x 12 mm)	2	
204	XYN4+F16FXS	Screw (M4 x 16 mm)	4	

* Support stand and the fixtures are not used on KX-B061M and KX-B062M.

12.5 Packing Parts

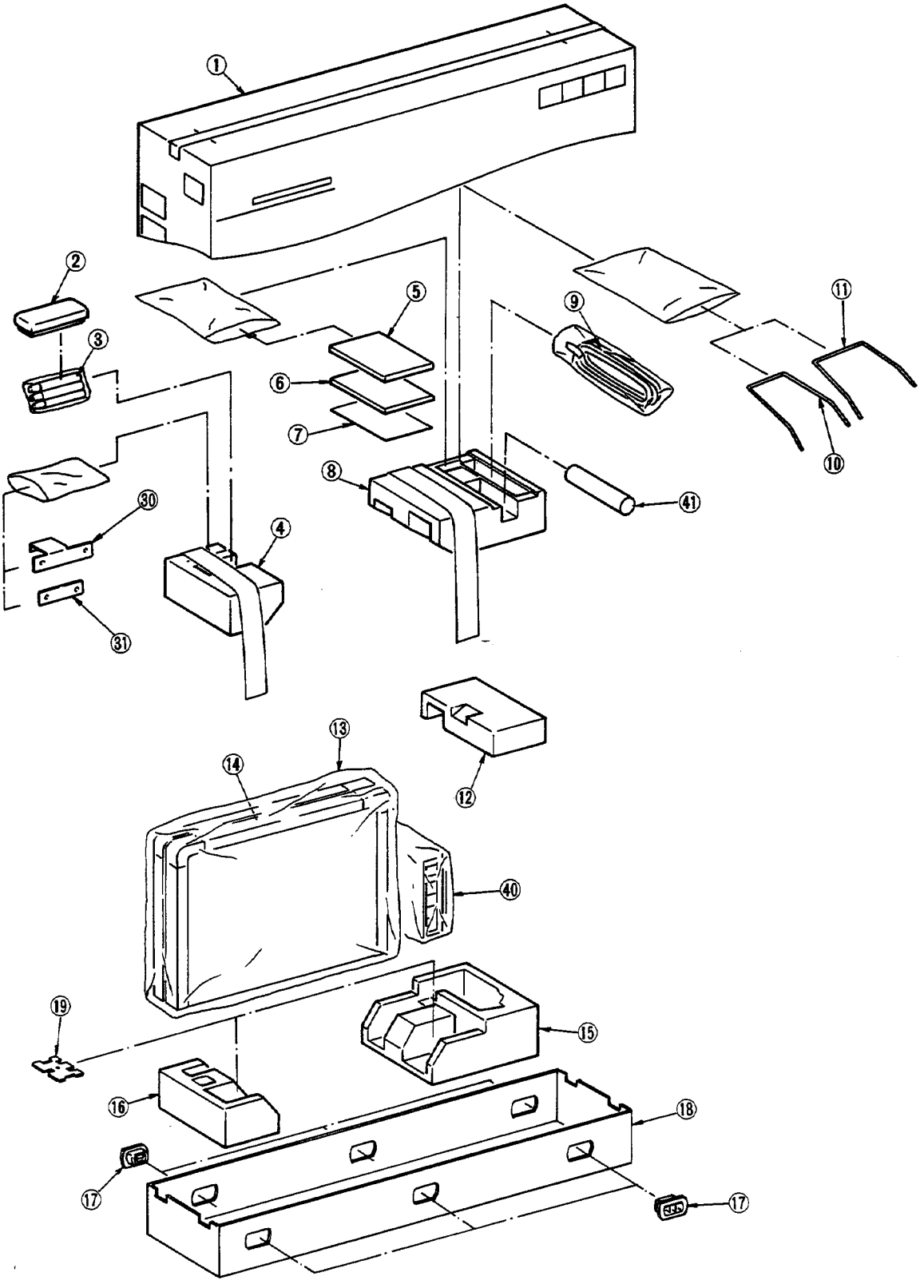
12.5.1 Packing Parts for KX-B430



REPLACEMENT MECHANICAL PARTS LIST (Packing Parts for KX-B430)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBPGA0149Y	Outer Carton for KX-B430	1	
	PBPGA0149Y-C	Outer Carton for KX-B430C	1	
	PBPGA0149Y-U	Outer Carton for KX-B430U	1	
	PBPGA0149Y-G	Outer Carton for KX-B430G	1	
	PBPGA0149YSP	Outer Carton for KX-B430SP	1	
	PBPGA0149Y-A	Outer Carton for KX-B430A	1	
	PBPGA0149Y-T	Outer Carton for KX-B430T	1	
	PBPGA0149YGJ	Outer Carton for KX-B430GJ	1	
2	WZOXB50EACOA	Eraser (complete)	1	
3	PBD-FH002520	Marker Set	1	
4	PBPQA0055Z	Cushion (right-top)	1	
5	PBQX50127Y	Operation Manual for KX-B430	1	
	PBQX50151Z	Operation Manual for KX-B430C/U/G/SP/A/T/GJ	1	
6	PBQX50128Y	Installation Manual for KX-B430	1	
	PBQX50152Z	Installation Manual for KX-B430C/U/G/SP/A/T/GJ	1	
7	PBQX70007Z	Warranty Card for KX-B430 only	1	
8	PBPQA0056Z	Cushion (left-top)	1	
9	PBJA4Z40	AC Power Cord for KX-B430/C/T	1	⚠
	PBJA5Z	AC Power Cord for KX-B430G/SP/GJ	1	⚠
	PBJA6Z	AC Power Cord for KX-B430U	1	⚠
	PBJA8Z40	AC Power Cord for KX-B430A	1	⚠
10	PBUEA0039Z	Paper Eject Guide A	1	
11	PBUEA0040Z	Paper Eject Guide B for KX-B430/C	1	
	PBUEA0055Z	Paper Eject Guide B for KX-B430U/G/SP/A/T/GJ	1	
12	PBPQA0062Z	Cushion for Printer	1	
13	PBPPA0008Z	Vinyl Bag (for Screen)	1	
14	XZB105X120A	Vinyl Bag (for Optical Unit)	1	
15	PBPQA0054Z	Cushion (left-bottom)	1	
16	PBPQA0053Z	Cushion (right-bottom)	1	
17	HP-460WS	Joint	6	
18	PBPGA0150Z	Bottom Carton	1	
19	PBPNA0073Z	Prop (Corrugated Board) A	1	
40	PBPPA0010Z	Vinyl Bag (for Printer)	1	
41	PBHP5Z	Thermal Paper (for U.S.A./Canada)	1	
	PBHP6Z	Thermal Paper (for Others)	1	

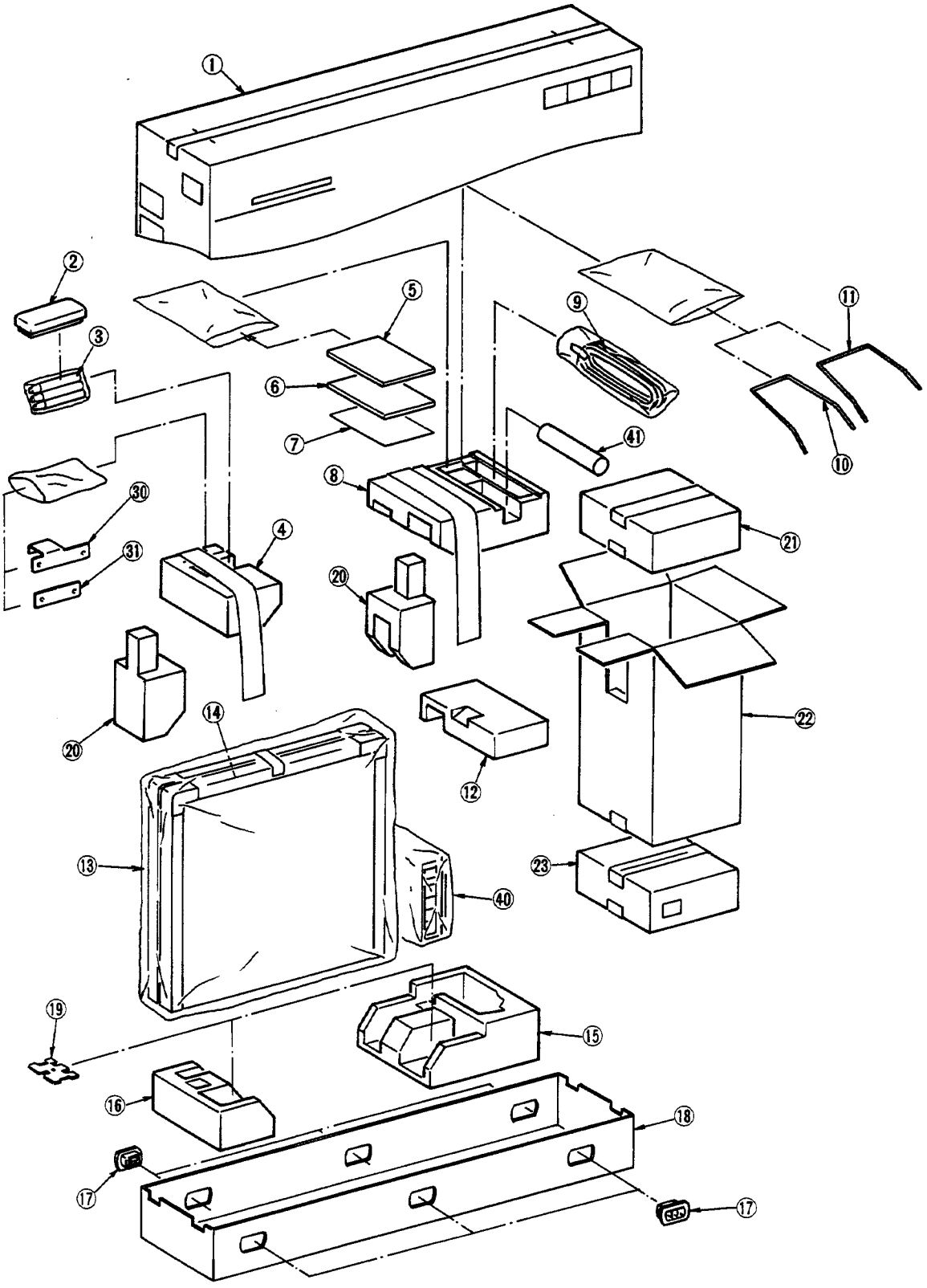
12.5.2 Packing Parts for KX-B530



REPLACEMENT MECHANICAL PARTS LIST (Packing Parts for KX-B530)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBPGA0143Y	Outer Carton for KX-B530	1	
	PBPGA0143Y-A	Outer Carton for KX-B530A	1	
	PBPGA0143Y-C	Outer Carton for KX-B530C	1	
	PBPGA0143Y-G	Outer Carton for KX-B530G	1	
	PBPGA0143YGJ	Outer Carton for KX-B530GJ	1	
	PBPGA0143Y-T	Outer Carton for KX-B530T	1	
	PBPGA0143Y-U	Outer Carton for KX-B530U	1	
	PBPGA0143YSP	Outer Carton for KX-B530SP	1	
2	WZOXB50EACOA	Eraser (complete)	1	
3	PBD-FH002520	Marker Set	1	
4	PBPQA0049Z	Cushion (right-top)	1	
5	PBQX50127Y	Operation Manual for KX-B530	1	
	PBQX50151Z	Operation Manual for KX-B530C/U/G/SP/A/T/GJ	1	
6	PBQX50128Y	Installation Manual for KX-B530	1	
	PBQX50152Z	Installation Manual for KX-B530C/U/G/SP/A/T/GJ	1	
7	PBQX70007Z	Warranty Card for KX-B530 only	1	
8	PBPQA0050Z	Cushion (left-top)	1	
9	PBJA4Z40	AC Power Cord for KB-B530/C/T	1	⚠
	PBJA5Z	AC Power Cord for KX-B530G/SP/GJ	1	⚠
	PBJA6Z	AC Power Cord for KX-B530U	1	⚠
	PBJA8Z40	AC Power Cord for KX-B530A	1	⚠
10	PBUEA0039Z	Paper Eject Guide A	1	
11	PBUEA0040Z	Paper Eject Guide B for KX-B530/C	1	
	PBUEA0055Z	Paper Eject Guide B for KX-B530U/G/SP/A/T/GJ	1	
12	PBPQA0051Z	Cushion for Printer	1	
13	PBPPA0008Z	Vinyl Bag (for Screen)	1	
14	XZB105X120A	Vinyl Bag (for Optical Unit)	1	
15	PBPQA0047Z	Cushion (right-bottom)	1	
16	PBPQA0048Z	Cushion (left-bottom)	1	
17	HP-460WS	Joint	6	
18	PBPGA0144Z	Bottom Carton	1	
19	PBPNA0055Z	Panel Pad (bottom)	2	
30	PBHMA0048Z	Panel Slide Plate (upper)	1	
31	PBHMA0049Z	Panel Slide Plate (lower)	1	
40	PBPPA0010Z	Vinyl Bag (for Printer)	1	
41	PBHP5Z	Thermal Paper (for U.S.A./Canada)	1	
	PBHP6Z	Thermal Paper (for Others)	1	

12.5.3 Packing Parts for KX-B630



REPLACEMENT MECHANICAL PARTS LIST (Packing Parts for KX-B630)

Ref. No.	Part No.	Description	Q'ty	Remark
1	PBPGA0151Y	Outer Carton for KX-B630	1	
	PBPGA0151Y-A	Outer Carton for KX-B630A	1	
	PBPGA0151Y-C	Outer Carton for KX-B630C	1	
	PBPGA0151Y-G	Outer Carton for KX-B630G	1	
	PBPGA0151YGJ	Outer Carton for KX-B630GJ	1	
	PBPGA0151Y-T	Outer Carton for KX-B630T	1	
	PBPGA0151Y-U	Outer Carton for KX-B630U	1	
	PBPGA0151YSP	Outer Carton for KX-B630SP	1	
2	WZOXB50EACOA	Eraser (complete)	1	
3	PBD-FH002520	Marker Set	1	
4	PBPQA0049Z	Cushion (right-top)	1	
5	PBQX50127Y	Operation Manual for KX-B630	1	
	PBQX50151Z	Operation Manual for KX-B630C/U/G/SP/A/T/GJ	1	
6	PBQX50128Y	Installation Manual for KX-B630	1	
	PBQX50152Z	Installation Manual for KX-B630C/U/G/SP/A/T/GJ	1	
7	PBQX70007Z	Warranty Card for KX-B630 only	1	
8	PBPQA0050Z	Cushion (left-top)	1	
9	PBJA4Z40	AC Power Cord for KB-B630/C/T	1	⚠
	PBJA5Z	AC Power Cord for KX-B630G/SP/GJ	1	⚠
	PBJA6Z	AC Power Cord for KX-B630U	1	⚠
	PBJA8Z40	AC Power Cord for KX-B630A	1	⚠
10	PBUEA0039Z	Paper Eject Guide A	1	
11	PBUEA0040Z	Paper Eject Guide B for KX-B630/C	1	
	PBUEA0055Z	Paper Eject Guide B for KX-B630U/G/SP/A/T/GJ	1	
12	PBPQA0051Z	Cushion for Printer	1	
13	PBPPA0008Z	Vinyl Bag (for Screen)	1	
14	XZB105X120A	Vinyl Bag (for Optical Unit)	1	
15	PBPQA0047Z	Cushion (right-bottom)	1	
16	PBPQA0048Z	Cushion (left-bottom)	1	
17	HP-460WS	Joint	6	
18	PBPGA0152Z	Bottom Carton	1	
19	PBPNA0055Z	Panel Pad (bottom)	2	
20	PBPQA0059Z	Cushion (upper; for Optical Unit)	2	
21	PBPGA0161Z	Inner Carton (upper)	1	
22	PBPGA0162Z	Inner Carton (middle)	1	
23	PBPGA0163Z	Inner Carton (lower)	1	
30	PBHMA0048Z	Panel Slide Plate (upper)	1	
31	PBHMA0049Z	Panel Slide Plate (lower)	1	
40	PBPPA0010Z	Vinyl Bag (for Printer)	1	
41	PBHP5Z	Thermal Paper (for U.S.A./Canada)	1	
	PBHP6Z	Thermal Paper (for Others)	1	

SECTION 13
REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Note: RTL (Retention Time Limited)

The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.
After the end of this period, the assembly will no longer be available.

Unique Parts Indication

The marking (M) in the Ref. No. column indicates unique parts for U.S.A., Canada and Taiwan versions (Power Source: 110—120 V AC.) These parts are applied to models KX-B430/C/T, KX-B530/C/T and KX-B630/C/T only.
The marking (E) in the Ref. No. column indicates unique parts for U.K., Germany, Spain, Australia and Southeast Asia versions (Power Source: 220—240 V AC). These parts are applied to models KX-B430U/G/SP/A/GJ, KX-B530U/G/SP/A/GJ and KX-B630U/G/SP/A/GJ only.

Abbreviation of Part Name and Description

1. Resistor

Example:

ERJ6GEYJ472 C 4.7k, J, 1/10W
TYPE ALLOWANCE

TYPE	ALLOWANCE
C: Carbon	F: ±1%
F: Fuse	G: ±2%
M: Metal Oxide	J: ±5%
Metal Film	K: ±10%
S: Soild	M: ±20%
W: Wire Wound	

2. Capacitor

Example:

ECUX1H104ZFX C 0.1, Z, 50V
TYPE ALLOWANCE

TYPE	ALLOWANCE
C: Ceramic	C: ±0.25 pF
E: Electrolytic	D: ±0.5 pF
P: Polyester	F: ±1 pF
Polypropylene	J: ±5%
T: Tantalum	K: ±10%
	M: ±20%
	P: +100%, −0%
	Z: +80%, −20%

CONTROL BOARD

Ref. No.	Part No.	Description
	RESISTORS	
R1	ERJ6GYEJ472	C 4.7k, J, 1/10W
R2	ERJ6GEYJ103	C 10k, J, 1/10W
R3	ERJ6GEYJ102	C 1k, J, 1/10W
R4	ERJ6GYEJ472	C 4.7k, J, 1/10W
R5	ERJ6GEYJ103	C 10k, J, 1/10W
R6	ERJ6GYEJ472	C 4.7k, J, 1/10W
R7	ERJ6GEYJ102	C 1k, J, 1/10W
R8	ERJ6GEYJ361	C 360, J, 1/10W
R9	ERJ6GYEJ472	C 4.7k, J, 1/10W
R10	ERJ6GYEJ472	C 4.7k, J, 1/10W
R12	ERJ6GEYJ101	C 100, J, 1/10W
R13	ERJ6GEYJ101	C 100, J, 1/10W
R14	ERJ6GEYJ470	C 47, J, 1/10W
R15	ERJ6GEYJ470	C 47, J, 1/10W
R16	ERJ6GEYJ470	C 47, J, 1/10W
R17	ERJ6GEYJ470	C 47, J, 1/10W
R18	ERJ6GEYJ470	C 47, J, 1/10W
R19	ERJ6GEYJ470	C 47, J, 1/10W
R20	ERJ6GEYJ470	C 47, J, 1/10W
R21	ERJ6GEYJ151	C 150, J, 1/10W
R22	ERJ6GEYJ151	C 150, J, 1/10W
R23	ERJ6GEYJ151	C 150, J, 1/10W

Ref. No.	Part No.	Description
R24	ERJ6GEYJ151	C 150, J, 1/10W
R25	ERJ6GEYJ151	C 150, J, 1/10W
R26	ERJ6GEYJ471	C 470, J, 1/10W
R27	ERJ6GEYJ221	C 220, J, 1/10W
R28	ERJ6GYEJ472	C 4.7k, J, 1/10W
R29	ERJ6GYEJ472	C 4.7k, J, 1/10W
R30	ERJ6GEYJ105	C 1M, J, 1/10W
R31	ERJ6GYEJ472	C 4.7k, J, 1/10W
R32	ERJ6GEYJ470	C 47, J, 1/10W
R33	ERJ6GEYJ470	C 47, J, 1/10W
R34	ERJ6GEYJ470	C 47, J, 1/10W
R35	ERJ6GEYJ470	C 47, J, 1/10W
R36	ERJ6GEYJ470	C 47, J, 1/10W
R37	ERJ6GEYJ470	C 47, J, 1/10W
R38	ERJ6GEYJ470	C 47, J, 1/10W
R39	ERJ6GEYJ470	C 47, J, 1/10W
R40	ERJ6GEYJ470	C 47, J, 1/10W
R41	ERJ6GEYJ470	C 47, J, 1/10W
R42	ERJ6GEYJ470	C 47, J, 1/10W
R43	ERJ6GEYJ470	C 47, J, 1/10W
R44	ERJ6GYEJ472	C 4.7k, J, 1/10W
R45	ERJ6GYEJ472	C 4.7k, J, 1/10W
R46	ERJ6GYEJ472	C 4.7k, J, 1/10W

Ref. No.	Part No.	Description
R47	ERJ6GYEJ472	C 4.7k, J, 1/10W
R48	ERJ6GYEJ472	C 4.7k, J, 1/10W
R49	ERJ6GYEJ472	C 4.7k, J, 1/10W
R50	ERJ6GYEJ472	C 4.7k, J, 1/10W
R51	ERJ6GEYJ101	C 100, J, 1/10W
R52	ERJ6GEYJ101	C 100, J, 1/10W
R53	ERJ6GEYJ101	C 100, J, 1/10W
R54	ERJ6GEYJ101	C 100, J, 1/10W
R55	ERJ6GEYJ101	C 100, J, 1/10W
R56	ERJ6GEYJ101	C 100, J, 1/10W
R57	ERJ6GEYJ101	C 100, J, 1/10W
R58	ERJ6GEYJ101	C 100, J, 1/10W
R59	ERJ6GEYJ101	C 100, J, 1/10W
R60	ERJ6GEYJ101	C 100, J, 1/10W
R61	ERJ6GEYJ101	C 100, J, 1/10W
R62	ERJ6GEYJ101	C 100, J, 1/10W
R63	ERJ6GEYJ101	C 100, J, 1/10W
R64	ERJ6GEYJ101	C 100, J, 1/10W
J1	ERJ6GEY0R00	0-ohm Jumper (only for KX-B630 Series)
J2	ERJ6GEY0R00	0-ohm Jumper (only for KX-B530 Series)
J3	ERJ6GEY0R00	0-ohm Jumper (only for KX-B430 Series)
J4	ERJ6GEY0R00	0-ohm Jumper
J5	ERJ6GEY0R00	0-ohm Jumper
J7	ERJ6GEY0R00	0-ohm Jumper
J8	ERJ6GEY0R00	0-ohm Jumper
J9	ERJ6GEY0R00	0-ohm Jumper
J10	ERJ6GEY0R00	0-ohm Jumper
J11	ERJ6GEY0R00	0-ohm Jumper
J12	ERJ6GEY0R00	0-ohm Jumper
J13	ERJ6GEYJ101	C 100, J, 1/10W
J14	ERJ6GEYJ101	C 100, J, 1/10W
J15	ERJ6GEYJ101	C 100, J, 1/10W
J16	ERJ6GEYJ101	C 100, J, 1/10W
J17	ERJ6GEYJ101	C 100, J, 1/10W
J18	ERJ6GEY0R00	0-ohm Jumper
J19	ERJ6GEY0R00	0-ohm Jumper
J20	ERJ6GEY0R00	0-ohm Jumper
J21	ERJ6GEY0R00	0-ohm Jumper
J22	ERJ6GEY0R00	0-ohm Jumper
J24	ERJ6GEY0R00	0-ohm Jumper
J25	ERJ6GEY0R00	0-ohm Jumper
J26	ERJ6GEY0R00	0-ohm Jumper
Z1	MNR14E0AJ103	Resistor Array
Z2	MNR14E0AJ103	Resistor Array
Z3	MNR14E0AJ103	Resistor Array
Z4	MNR14E0AJ103	Resistor Array
Z5	MNR14E0AJ103	Resistor Array
Z6	MNR14E0AJ103	Resistor Array
Z7	MNR14E0AJ472	Resistor Array
Z8	MNR14E0AJ472	Resistor Array
Z9	MNR14E0AJ472	Resistor Array
Z10	MNR14E0AJ472	Resistor Array
Z11	MNR14E0AJ472	Resistor Array
Z12	MNR14E0AJ472	Resistor Array
Z13	MNR14E0AJ472	Resistor Array
Z14	MNR14E0AJ472	Resistor Array
Z15	MNR14E0AJ151	Resistor Array
Z16	MNR14E0AJ151	Resistor Array
Z17	MNR14E0AJ151	Resistor Array
Z18	MNR14E0AJ151	Resistor Array
Z19	MNR14E0AJ151	Resistor Array
Z20	MNR14E0AJ151	Resistor Array
Z21	MNR14E0AJ103	Resistor Array
	CAPACITORS	
C1	ECUX1H104ZFX	C 0.1, Z, 50V
C2	ECUX1H104ZFX	C 0.1, Z, 50V
C3	ECEV1CA100SR	E 10, 16V
C4	ECUX1H104ZFX	C 0.1, Z, 50V
C5	ECUX1H104ZFX	C 0.1, Z, 50V
C6	ECEV1CA470S	E 47, 16V
C7	ECUX1H104ZFX	C 0.1, Z, 50V
C8	ECUX1H102ZFN	C 1000p, Z, 50V
C9	ECUX1H104ZFX	C 0.1, Z, 50V

Ref. No.	Part No.	Description
C10	ECUX1H104ZFX	C 0.1, Z, 50V
C11	ECUX1H100CCN	C 10p, C, 50V
C13	ECUX1H103ZFG	C 0.01, Z, 50V
C14	ECUX1H104ZFX	C 0.1, Z, 50V
C15	ECUX1H104ZFX	C 0.1, Z, 50V
C16	ECUX1H104ZFX	C 0.1, Z, 50V
C17	ECUX1H104ZFX	C 0.1, Z, 50V
C18	ECUX1H104ZFX	C 0.1, Z, 50V
C19	ECUX1H104ZFX	C 0.1, Z, 50V
C20	ECUX1H104ZFX	C 0.1, Z, 50V
C21	ECUX1H104ZFX	C 0.1, Z, 50V
C22	ECUX1H104ZFX	C 0.1, Z, 50V
C23	ECUX1H104ZFX	C 0.1, Z, 50V
C24	ECUX1H104ZFX	C 0.1, Z, 50V
C25	ECUX1H101JCG	C 100p, J, 50V
C26	ECUX1H101JCG	C 100p, J, 50V
C27	ECUX1H101JCG	C 100p, J, 50V
C28	ECUX1H101JCG	C 100p, J, 50V
C29	ECUX1H101JCG	C 100p, J, 50V
C30	ECUX1H101JCG	C 100p, J, 50V
C31	ECUX1H101JCG	C 100p, J, 50V
C32	ECUX1H101JCG	C 100p, J, 50V
C35	ECUX1H104ZFX	C 0.1, Z, 50V
C36	ECUX1H101JCG	C 100p, J, 50V
C37	ECUX1H101JCG	C 100p, J, 50V
C38	ECUX1H101JCG	C 100p, J, 50V
C39	ECUX1H101JCG	C 100p, J, 50V
C40	ECUX1H101JCG	C 100p, J, 50V
C41	ECUX1H101JCG	C 100p, J, 50V
C42	ECUX1H101JCG	C 100p, J, 50V
C43	ECUX1H101JCG	C 100p, J, 50V
C44	ECUX1H101JCG	C 100p, J, 50V
C45	ECUX1H101JCG	C 100p, J, 50V
C46	ECUX1H101JCG	C 100p, J, 50V
C47	ECUX1H101JCG	C 100p, J, 50V
C48	ECUX1H101JCG	C 100p, J, 50V
C49	ECUX1H101JCG	C 100p, J, 50V
C50	ECUX1H101JCG	C 100p, J, 50V
C51	ECUX1H101JCG	C 100p, J, 50V
C52	ECUX1H101JCG	C 100p, J, 50V
C53	ECUX1H101JCG	C 100p, J, 50V
C54	ECUX1H101JCG	C 100p, J, 50V
C55	ECUX1H104ZFX	C 0.1, Z, 50V
C56	ECUX1H104ZFX	C 0.1, Z, 50V
C57	ECUX1H104ZFX	C 0.1, Z, 50V
C58	ECEV1CA470S	E 47, 16V
C59	ECEV1CA470S	E 47, 16V
C60	ECUX1H100CCN	C 10p, C, 50V
C61	ECUX1H100CCN	C 10p, C, 50V
C62	ECUX1H100CCN	C 10p, C, 50V
C63	ECUX1H100CCN	C 10p, C, 50V
C64	ECUX1H100CCN	C 10p, C, 50V
C65	ECUX1H100CCN	C 10p, C, 50V
C66	ECUX1H100CCN	C 10p, C, 50V
C67	ECUX1H100CCN	C 10p, C, 50V
C68	ECUX1H100CCN	C 10p, C, 50V
C69	ECUX1H100CCN	C 10p, C, 50V
C70	ECUX1H100CCN	C 10p, C, 50V
C71	ECUX1H100CCN	C 10p, C, 50V
C72	ECUX1H100CCN	C 10p, C, 50V
C73	ECUX1H100CCN	C 10p, C, 50V
C74	ECUX1H100CCN	C 10p, C, 50V
C75	ECUX1H100CCN	C 10p, C, 50V
C85	ECUX1H101JCG	C 100p, J, 50V
C86	ECUX1H101JCG	C 100p, J, 50V
C87	ECUX1H101JCG	C 100p, J, 50V
C88	ECUX1H101JCG	C 100p, J, 50V
C89	ECUX1H101JCG	C 100p, J, 50V
C90	ECUX1H101JCG	C 100p, J, 50V
C91	ECUX1H101JCG	C 100p, J, 50V
C92	ECUX1H101JCG	C 100p, J, 50V
C93	ECUX1H101JCG	C 100p, J, 50V
C94	ECUX1H101JCG	C 100p, J, 50V
C99	ECUX1H103ZFG	C 0.01, Z, 50V

Ref. No.	Part No.	Description
C100	ECUX1H103ZFG	C 0.01, Z, 50V
C101	ECUX1H104ZFX	C 0.1, Z, 50V
C102	ECUX1H104ZFX	C 0.1, Z, 50V
	COILS	
L1	LQH4N220K04	Coil
L2	BLM21A601SPT	Coil
	TRANSISTORS	
Q1	2SA1037K	Transistor
Q2	DTC143XKT146	Transistor with Resistor
Q3	IMH10	Transistor with Resistor
Q4	IMH10	Transistor with Resistor
	ICs	
IC1	M38002M2-314	IC (CPU)
IC2	M51953BFP	IC (Reset)
IC3	S-2914AIF10	IC (EEPROM)
IC4	LC82102-04	IC (Shading Correction)
IC5	M64291FP	IC (AGC)
IC6	HG62G014R60F	IC (Gate Array)
IC7	TC514800AJ80	IC (4M-bit DRAM)
IC8	SN74HC04ANS	IC (Logic)
	OTHERS	
	PBAPX146B530	CONTROL Board (Ass'y) (RTL)
CN1	B4B-XH-A	Connector (4P)
CN2	1-175487-4	Connector (14P)
CN3	PB175487-3	Connector (3P)
CN4	53014-0210	Connector (2P)
CN5	PBB2B-PH	Connector (2P)
CN6	175487-9	Connector (9P)
CN7	ILS15PS2T2EF	Connector (15P)
CN8	128A50S2BL14	Connector (50P)
CN9	175487-8	Connector (8P)
X1	CST10.0MTWTF	Ceramic Oscillator (10.0MHz)

CCD BOARD

Ref. No.	Part No.	Description
	RESISTORS	
R100	ERDS2TJ470	C 47, J, 1/4W
R101	ERDS2TJ470	C 47, J, 1/4W
R102	ERDS2TJ470	C 47, J, 1/4W
R103	ERDS2TJ101	C 100, J, 1/4W
R104	ERDS2TJ101	C 100, J, 1/4W
R105	ERDS2TJ222	C 2.2k, J, 1/4W
R106	ERDS2TJ471	C 470, J, 1/4W
	CAPACITORS	
C100	ECEA1CU220	E 22, 16V
C101	RPE132F104	Capacitor
	TRANSISTOR	
Q100	2SC1740STPR	Transistor
	IC	
IC100	UPD3753	IC (CCD)
	OTHERS	
	PBAPX147B530	CCD Board (Ass'y) (RTL)
CN100	175487-8	Connector (8P)

HOME-SENSOR BOARD

Ref. No.	Part No.	Description
	RESISTORS	
R300	ERDS2TJ151	C 150, J, 1/4W
R301	ERDS2TJ563	C 56k, J, 1/4W
R302	ERDS2TJ473	C 47k, J, 1/4W
R303	ERDS2TJ472	C 4.7k, J, 1/4W
	CAPACITORS	
C300	ECEA0JKS470	E 47, 6.3V
C301	RPE132F104	Capacitor
	TRANSISTOR	
Q300	2SC1740STPR	Transistor
	IC	
IC300	ON2173-R	IC (Photo Reflector)
	OTHERS	
	PBAPX153B530	HOME-SENSOR Board (Ass'y) (RTL)
	PBJEA0227Z	Home Sensor Cable

POWER BOARD

Ref. No.	Part No.	Description	
	RESISTORS		
R401	ERDS2TJ102	C 1k, J, 1/4W	
R402	ERDS2TJ102	C 1k, J, 1/4W	
R403	ERDS2TJ102	C 1k, J, 1/4W	
R404	ERDS2TJ102	C 1k, J, 1/4W	
R405	ERX2SJR68H	M 0.68, J, 2W	
R406	ERDS2TJ563	C 56k, J, 1/4W	
R407	ERDS2TJ563	C 56k, J, 1/4W	
R408	ERDS2TJ152	C 1.5k, J, 1/4W	
R409	ERX2SJR68H	M 0.68, J, 2W	
R410	ERDS2TJ102	C 1k, J, 1/4W	
R411	ERDS2TJ102	C 1k, J, 1/4W	
R412	ERDS2TJ102	C 1k, J, 1/4W	
R413	ERDS2TJ102	C 1k, J, 1/4W	
R414	ERDS2TJ102	C 1k, J, 1/4W	
R415	ERDS2TJ102	C 1k, J, 1/4W	
R416	ERDS2TJ102	C 1k, J, 1/4W	
R417	ERDS2TJ102	C 1k, J, 1/4W	
R421	ERC12AGK334D	S 330k, K, 1/2W	⚠
R422 (M)	ERG2SJ333	M 33k, J, 2W	
R422 (E)	ERG2SJ104	M 100k, J, 2W	
R423	ERDS2TJ153	C 15k, J, 1/4W	
R424	ERDS2TJ100	C 10, J, 1/4W	
R425	ERDS1TJ330	C 33, J, 1/2W	
R426	ERDS2TJ102	C 1k, J, 1/4W	
R427	EROS2TKF3301	M 3.30k, F, 1/4W	
R428	ERDS2TJ222	C 2.2k, J, 1/4W	
R429	ERDS2TJ121	C 120, J, 1/4W	
R430 (M)	ERDS2TJ181	C 180, J, 1/4W	
R430 (E)	ERDS2TJ101	C 100, J, 1/4W	
R431	ERCMPC7101J	M 0.1, 5W	
R432 (M)	ERG2SJ100P	M 10, J, 2W	
R433	ERDS2TJ121	C 120, J, 1/4W	
R434	ERDS2TJ102	C 1k, J, 1/4W	
R435	ERDS2TJ101	C 100, J, 1/4W	
R436	ERDS2TJ153	C 15k, J, 1/4W	
R437	ERDS2TJ102	C 1k, J, 1/4W	
R438	ERDS2TJ103	C 10k, J, 1/4W	
R439	ERDS2TJ103	C 10k, J, 1/4W	
R440	ERDS2TJ103	C 10k, J, 1/4W	
R441	ERX1SJR22P	M 0.22, J, 1W	
R442	ERDS2TJ101	C 100, J, 1/4W	
R443	ERG1SJ102	M 1k, J, 1W	
R444	EROS2TKF3301	M 3.30k, F, 1/4W	
R445	EROS2TKF1101	M 1.10k, F, 1/4W	
R446	ERDS2TJ120	C 12, J, 1/4W	
R447	ERDS2TJ120	C 12, J, 1/4W	
R448	ERDS2TJ472	C 4.7k, J, 1/4W	

Ref. No.	Part No.	Description
R450	ERDS2TJ103	C 10k, J, 1/4W
R451	ERDS2TJ103	C 10k, J, 1/4W
R452	ERDS2TJ102	C 1k, J, 1/4W
R453	ERDS2TJ472	C 4.7k, J, 1/4W
R454	ERU5TAJ100	W 10, J, 5W
R455	ERG2SJ152	M 1.5k, J, 2W
R456	ERG2SJ152	M 1.5k, J, 2W
R457	ERDS2TJ103	C 10k, J, 1/4W
R458	ERDS2TJ221	C 220, J, 1/4W
R459	ERDS2TJ102	C 1k, J, 1/4W
R460	ERDS2TJ473	C 47k, J, 1/4W
R461	ERG2SJ100P	M 10, J, 2W
VR400	EVNDXAA03B13	Variable Resistor (1kB)
	CAPACITORS	
C400	ECEA1VGE470	E 47, 35V
C401	ECKF1H821KB	C 820p, K, 50V
C402	ECKF1H821KB	C 820p, K, 50V
C403	ECKF1H821KB	C 820p, K, 50V
C404	ECKF1H821KB	C 820p, K, 50V
C405	ECFF1H104ZF	C 0.1, Z, 50V
C406	ECFF1H104ZF	C 0.1, Z, 50V
C407	ECFF1H104ZF	C 0.1, Z, 50V
C408	ECFF1H104ZF	C 0.1, Z, 50V
C410	PA224-C	Capacitor ⚠
C411	ECKDRS222ME	C 2200p, AC250V ⚠
C412	ECKDRS222ME	C 2200p, AC250V ⚠
C413	PA224-C	Capacitor ⚠
C414 (M)	200MXR1000MD	Capacitor ⚠
C414 (E)	ECOS2GB271EB	Capacitor ⚠
C415	50YXB33M	E 33, 50V
C416	TPD55Y5V104	Capacitor
C417	ECCF1H391J5	C 390p, J, 50V
C418	ECQB1H682JF3	P 6800p, J, 50V
C419	ECQB1H473JF3	P 0.047, J, 50V
C420 (M)	ECKD3A101KB	C 100p, K, 1kV
C421	ECKD3A101KB	C 100p, K, 1kV
C422	35YXB2200M	E 2200, 35V
C423	ECQV1H104JL3	P 0.1, J, 50V
C424	50SSP10M	E 10, 50V
C425	35SSP220M	E 220, 35V
C426	35YXB100M	E 100, 35V
C427	TPD55Y5V104	Capacitor
C428	10YXB1000M	E 1000, 10V
C429	ECCF1H221J5	C 220p, J, 50V
C430	ECKDRS472ME	C 4700p, AC250V ⚠
C431	ECKDRS472ME	C 4700p, AC250V ⚠
C432	ECQB1H472	P 4700p, K, 50V
C433	ECQB1H472	P 4700p, K, 50V
C434	ECQV1H474	P 0.47, J, 50V
C435	ECQF4154J	P 0.15, 400V
C436	10YXB100M	E 100 10V
C437 (M)	ECEA2EGE3R3	E 3.3, 250V
C437 (E)	ECEA2GGE2R2	E 2.2, 400V
C438	TPD55Y5V104	Capacitor
	COILS	
L401	ELF18D416	Coil ⚠
L402	ELF18D416	Coil ⚠
L403	HK10S080-121	Choke Coil
L404	RCH110-471K	Choke Coil
L405	PBSK21BS060X	Fluorescent Lamp Coil
	TRANSFORMERS	
T400 (M)	ETS29AC1S5AC	Switching Transformer ⚠
T400 (E)	ETS29AC1T8AC	Switching Transformer ⚠
T401	PBLT6H1ZA	Fluorescent Lamp Transformer ⚠
	DIODES	
D400	EK13V0	Diode
D401	EK13V0	Diode
D402	EK13V0	Diode

Ref. No.	Part No.	Description
D403	EK13V0	Diode
D404	HZ33-2	Zener Diode
D405	HZ33-2	Zener Diode
D406	HZ33-2	Zener Diode
D407	HZ33-2	Zener Diode
D410 (M)	ENC271D14AQ2	Surge Absorber ⚠
D410 (E)	ENC471D14AQ2	Surge Absorber ⚠
D411	D3SBA60-4101	Diode ⚠
D413	ERB44-10G1	Diode
D414	ERA91-02	Diode
D415	D1N60	Diode
D416	RD27ESAB4	Zener Diode
D417	ERA91-02	Diode
D419	ESAD92M-02	Diode
D420	ERA83004AVRB	Diode
D421	MA165	Diode
D422	MA165	Diode
D423	RD27ESAB4	Zener Diode
D424	RD5.1ESAB2	Zener Diode
D425	PBRM26V1	Diode
D426	ENC182D14AZQ	Surge Absorber (only for U.S.A. and Taiwan models) ⚠
	DSAZR2-362M	Surge Absorber (except U.S.A. and Taiwan models) ⚠
D427	MA165	Diode
	TRANSISTORS	
Q400	DTA143XSATP	Transistor with Resistor
Q401	DTC143XSATP	Transistor with Resistor
Q402 (M)	2SK1101-01M	FET ⚠
Q402 (E)	2SK1985-01M	FET ⚠
Q403	IRFI9Z34G	FET
Q404	2SB891F	Transistor
Q405	2SA673AC	Transistor
Q406	PB2SB1389	Transistor
Q407	PB2SD1274C	Transistor
Q408	PB2SD1274C	Transistor
Q409	2SC1740STPR	Transistor
Q410	2SA933STPR	Transistor
Q411	DTC143XSATP	Transistor with Resistor
	ICs	
IC400	M54646AP	IC (Current Source)
IC401	MP4303	Transistor Array
IC402	MP4303	Transistor Array
IC403	FA5310P	IC
IC404	MC34063AP1	IC (Switching Regulator)
IC405	HA17431P	IC (Shunt Regulator)
IC406 (M)	PC817K	Photocoupler ⚠
IC406 (E)	TLP734F	Photocoupler ⚠
IC407 (M)	PC817K	Photocoupler ⚠
IC407 (E)	TLP734F	Photocoupler ⚠
	OTHERS	
	PAUX37802	Ground Lug
	PBAPX148B530	POWER Board (Ass'y) (only for U.S.A. and Taiwan models) (RTL)
	PBAPX148B53C	POWER Board (Ass'y) (only for Canada models) (RTL)
(E)	PBAPX167B53U	POWER Board (Ass'y) (RTL)
	PBJEA0290Z	Heat Sink Ground Cable
	S12840-NP	Heat Sink
	TJC6320	Fuse Holder
	XTN3+10JFX	Screw
CN400	B2P3-VH	Connector (2P) ⚠
CN401	PBB5P-VH	Connector (5P)
CN402	B4B-XH-A	Connector (4P)
CN403	1-175487-4	Connector (14P)
CN404	B5B-XH-A	Connector (5P)
CN405	B5B-EH	Connector (5P)
CN406	PBB4B-EH	Connector (4P)
CN407	175487-7	Connector (7P)

Ref. No.	Part No.	Description	
F400 (M)	PB2373.15	Fuse 3.15A	⚠
F400 (E)	PB2183.15	Fuse 3.15A	⚠
F401 (M)	PB23706.3	Fuse 6.3A	⚠
F401 (E)	PB21806.3	Fuse 6.3A	⚠
F402 (M)	PB2373.15	Fuse 3.15A	⚠
F402 (E)	PB2183.15	Fuse 3.15A	⚠
FG	PBJEA0289Z	Grounding Cable	
ICP400	ICP-F38	IC Protector	
ICP401	ICP-F38	IC Protector	
ICP402	ICP-F38	IC Protector	
TH400	10D-11F2	Power Thermistor	
TH401	103AT-2B	Thermistor	

PANEL BOARD

Ref. No.	Part No.	Description	
	RESISTORS		
R200	ERDS2TJ271	C 270, J, 1/4W	
R201	ERDS2TJ271	C 270, J, 1/4W	
R202	ERDS2TJ271	C 270, J, 1/4W	
R203	ERDS2TJ271	C 270, J, 1/4W	
R204	ERDS2TJ271	C 270, J, 1/4W	
R205	ERDS2TJ271	C 270, J, 1/4W	
R206	ERDS2TJ271	C 270, J, 1/4W	
R207	ERDS2TJ271	C 270, J, 1/4W	
	CAPACITOR		
C200	RPE132F104	Capacitor	
	DIODE		
D200	LN310GP	LED (Green)	
	IC		
IC200	LA-401MD	7-segment LED	
	OTHERS		
	LH-5S-1.5	LED Spacer	
	PBAPX152B530	PANEL Board (Ass'y)	(RTL)
CN200	ILS15PS2L2EF	Connector (15P)	
SW200	EVQ-21405R	Switch	
SW201	EVQ-21405R	Switch	
SW202	EVQ-21405R	Switch	
SW203	EVQ-21405R	Switch	
SW204	EVQ-21405R	Switch	

TOOL

Ref. No.	Part No.	Description
	PBMDA0244Z-J	Screen Tool